542
.B6
V.7

HARVARD UNIVERSITY.

LIBRARY

OF THE

MUSEUM OF COMPARATIVE ZOÖLOGY.

14273.

Exchange.

July 26, 1909.

CATALOGUE

OF THE

LEPIDOPTERA PHALÆNÆ

IN THE

BRITISH MUSEUM

VOLUME VII.

LONDON:
PRINTED BY ORDER OF THE TRUSTEES.
1908.

(All rights reserved.)

CATALOGUE

OF THE

NOCTUIDÆ

IN THE

COLLECTION

OF THE

BRITISH MUSEUM.

BY

SIR GEORGE F. HAMPSON, BART.

LONDON:
PRINTED BY ORDER OF THE TRUSTEES.

SOLD BY
LONGMANS & Co., 39 PATERNOSTER ROW, E.C.;
B. QUARITCH, 11 GRAFTON STREET, NEW BOND STREET, W.;
DULAU & Co., 37 SOHO SQUARE, W.;
AND AT THE
BRITISH MUSEUM (NATURAL HISTORY), CROMWELL ROAD, S.W.

1908.

QC
842
.B8
V.7

PRINTED BY TAYLOR AND FRANCIS,
RED LION COURT, FLEET STREET.

PREFACE.

—o—

The subject of Vol. VII. of the 'Catalogue of Moths' is the classification of the very large subfamily *Acronyctinæ*, which comprises some 3,000 species belonging to over 300 genera and will occupy three volumes of the Catalogue. The subfamily is characterised by the trifid neuration of the hind wing combined with spineless tibiæ and smooth eyes not surrounded by bristle-like hairs, and it is the least specialised of the subfamilies of the *Noctuidæ Trifinæ*.

Sir George Hampson has again to thank all those who helped him with the earlier volumes of the Catalogue, for their assistance in various ways in the preparation of the present volume, especially Herr R. Püngeler, of Aachen, and Prof. J. B. Smith, who has again presented many species new to the British Museum Collection and coloured drawings made from types of others; the authorities of the U.S. National Museum, Washington, for drawings from types and for the loan of types from the Schaus Collection; and the authorities of the Brooklyn Institute of Arts and Sciences for drawings from the types in the Neumœgen Collection. All these drawings are reproduced and their sources acknowledged in the text.

The manuscript dealing with the remainder of the subfamily is prepared and ready for press and will be issued in two volumes. It is hoped that these will appear in 1909.

CHAS. O. WATERHOUSE.

British Museum (Natural History),
November 23rd, 1908.

SYSTEMATIC INDEX.

Page

Fam. NOCTUIDÆ..... 1

Subfam. ACRONYCTINÆ .. 1

Phœopyra, *Hmpsn.* 19
2748. chloeropis (*Turner*).... 20
2749. novaguinensis (*Beth.-Baker*) 20
Perinænia, *Butl.* 21
2750. lignosa, *Butl.* 21
Syntomopus, *Guen.* 22
2751. albicilia (*Hmpsn.*) 22
2752. cinnamomea (*Kleem.*).. 23
2753. effusa (*Boisd.*) 24
Peripyra, *Hmpsn.*..... 25
2754. sanguinipuncta (*Guen.*). 25
Amphipyra, *Ochs.* 26
2755. magna, *Wlk.* 27
2756. pyramidea (*Linn.*) 28
2757. pyramidoides, *Guen.* .. 29
2758. cupreipennis, *Moore* .. 30
2759. livida (*Schiff.*) 31
2760. atronitens (*Wlk.*) 31
2761. tripartita, *Butl.* 32
2762. jancousci, *Oberth.* 32
2763. erebina, *Butl.* 33
2764. perflua (*Fabr.*)..... 34
2765. tetra (*Fabr.*) 34
2766. tragopoginis (*Linn.*) .. 35
2767. styx, *Herr.-Schäff.* 36
2768. schrenci, *Mén.*..... 36
2769. subrigua, *Brem.* 37
2770. micans, *Led.*..... 37
2771. molybdea, *Christ.* 38
2772. alpheraci (*Staud.*) 39
2773. glabella (*Morr.*) 39
2774. sergei (*Staud.*)..... 40
Bityla, *Wlk.*..... 41
2775. defigurata (*Wlk.*) 41
2776. sericea, *Butl.* 41

Page

2777. pallida (*Hudson*)..... 42
Gracilipalpus, *Calb.*..... 42
2778. turcomanica (*Christ.*).. 43
2779. ephialtes (*Hübn.*) 43
Stygiostola, *Hmpsn.* 44
2780. umbratica (*Goeze*) 44
Orthogonica, *Feld.* 45
2781. plana (*Leech*) 46
2782. plumbinotata, *Hmpsn.* . 46
2783. sera (*Feld.*) 47
2784. grisea (*Leech*) 49
Mania, *Treit.*..... 49
2785. maura (*Linn.*) 50
2786. muscivirens (*Butl.*) 51
2787. venata, *Hmpsn.* 52
2788. nyctichroa, *Hmpsn.*..... 53
2789. phæochroa, *Hmpsn.* .. 53
2790. olivescaria (*Swinh.*).... 54
Magusa, *Wlk.* 55
2791. olivaria, *Hmpsn.*..... 55
2792. œnistis, *Hmpsn.* 56
2793. leucorina, *Hmpsn.* 57
2794. versicolora (*Saalm.*) .. 57
2795. tenebrosa (*Moore*) 58
2796. orbifera (*Wlk.*) 59
Stenopterygia, *Hmpsn.* 61
2797. tenebrosa, *Hmpsn.* 61
2798. subcurva (*Wlk.*) 62
2799. cebeæ (*Beth.-Baker*) .. 63
Dipterygia, *Steph.* 64
2800. cebeæ, *Beth.-Baker*.... 64
2801. babooni, *Beth.-Baker* .. 65
2802. scabriuscula (*Linn.*) .. 66
2803. caliginosa (*Wlk.*) 67
2804. japonica, *Leech* 68
2805. indica, *Moore* 69
2806. vagivitta, *Wlk.* 69
2807. cristifera, *Hmpsn.* 70
2808. umbrifera (*Butl.*) 71
2809. patina (*Harr.*)..... 71

Page

Dipterygia (*con.*).
2810. pallida, *Dogn.* 72
2811. ordinaria (*Butl.*) 73
2812. lignaris (*Schaus*) 74
2813. assueta (*Butl.*)..... 74
2814. nicea (*Swinh.*) 75
Parastichtis, *Hübn.* 76
2815. nigricostata, *Hmpsn.* .. 79
2816. cucullifornis (*Grote*) .. 79
2817. verba coides (*Guen.*) .. 80
2818. nigrior (*Smith*) 81
2819. cariosa (*Guen.*) 82
2820. relicina (*Morr.*) 82
2821. lithoxylea (*Schiff.*) 83
2822. sublustris (*Esp.*) 84
2823. arabs (*Oberth.*)..... 85
2824. cristata (*Grote*) 85
2825. vulgaris (*Grote & Rob.*). 86
2826. auranticolora (*Grote*) .. 87
2827. lignicolora (*Guen.*) 88
2828. antennata (*Smith*) 88
2829. perstriata, *Hmpsn.* 89
2830. monoglypha (*Hüfn.*) .. 90
2831. dionea (*Smith*)..... 91
2832. strigidisca (*Moore*) 92
2833. submarginata (*Leech*) .. 92
2834. flavistigma (*Moore*).... 93
2835. genialis (*Grote*) 94
2836. chinensis (*Leech*)..... 94
2837. hepatica (*Linn.*) 95
2838. sodalis (*Butl.*) 96
2839. rurea (*Fabr.*) 97
2840. vultuosa (*Grote*) 98
2841. apamiformis (*Guen.*) .. 99
2842. multicolora (*Dyar*).... 100
2843. plutonia (*Grote*) 100
2844. funerea (*Hein.*) 101
2845. boopis, *Hmpsn.* 102
2846. occidens (*Grote*) 103
2847. albina (*Grote*) 103
2848. castanea (*Grote*) 104
2849. arctica (*Boisd.*) 105
2850. leucostigma (*Moore*) .. 106
2851. purpurina (*Hmpsn.*) .. 106
2852. veterina (*Led.*) 107
2853. rorulenta (*Smith*) 108
2854. suffusca (*Morr.*) 108
Eurabila, *Butl.* 109
2855. lignea, *Butl.*..... 109
Euplexidia, *Hmpsn.*..... 110
2856. noctuiformis, *Hmpsn.*.. 110
Checupa, *Moore* 111
2857. fortissima, *Moore*..... 112
2858. nigrostrigata (*Beth.-Baker*) 113

Page

Trachea, *Ochs.* 113
2859. partita (*Moore*) 114
2860. illocata (*Wlk.*)..... 115
2861. cyanelinea (*Hmpsn.*) .. 115
2862. subviridis (*Butl.*)..... 116
2863. bella (*Butl.*)..... 117
2864. fasciculata (*Leech*) 118
2865. hastata (*Moore*) 119
2866. repetita (*Butl.*) 119
2867. stoliczcæ (*Feld.*) 120
2868. distorta (*Moore*) 121
2869. melanoleuca (*Hmpsn.*) . 122
2870. melanodonta (*Hmpsn.*) . 122
2871. melanobasis (*Hmpsn.*) . 123
2872. atritornea, *Hmpsn.* 124
2873. toxaridia (*Druce*)..... 124
2874. stellifera (*Moore*)..... 125
2875. distans (*Moore*) 126
2876. indistans (*Guen.*)..... 127
2877. iorrhoa (*Meyr.*) 128
2878. nigribarbata, *Hmpsn.* .. 129
2879. breviuscula (*Wlk.*).... 129
2880. smaragdistis (*Beth.-Baker*) 137
2881. mniochlora (*Meyr.*) ... 138
2882. leucopera, *Hmpsn.* 138
2883. trichroma (*Meyr.*) 139
2884. bryochlora (*Meyr.*).... 139
2885. albifusa, *Hmpsn.*..... 140
2886. albidisca (*Moore*)..... 141
2887. aurantiaca (*Hmpsn.*) .. 142
2888. auroviridis (*Moore*).... 142
2889. chrysochlora, *Hmpsn.*.. 143
2890. albinota (*Moore*)..... 144
2891. olivacea (*Moore*)..... 144
2892. venosa (*Moore*) 145
2893. literata (*Moore*) 145
2894. chalcochlora (*Hmpsn.*) . 146
2895. atrovirens (*Moore*) 147
2896. dinava (*Beth.-Baker*).. 147
2897. aurigera (*Wlk.*) 148
2898. microspila, *Hmpsn.*..... 149
2899. melanospila, *Koll.* 149
2900. atriplicis (*Linn.*)..... 150
2901. auriplena (*Wlk.*)..... 151
2902. leucodonta, *Hmpsn.* .. 152
2903. delicata (*Grote*) 153
2904. anguliplaga (*Wlk.*).... 154
2905. malezieuxi (*Dogn.*).... 154
2906. uscana (*Druce*) 155
2907. tociensis (*Butl.*) 156
2908. chlorogrammata (*Hmpsn.*)..... 156
2909. lucia (*Feld.*)..... 157
2910. pratti (*Beth.-Baker*) .. 157

	Page
2911. viridis (*Druce*)	158
2912. smaragdina (*Neum.*)	159
2913. viridimusca (*Smith*)	159
2914. eugrapha, *D. Jones*	160
2915. niteus (*Butl.*)	161
2916. jancousci (*Oberth.*)	161
2917. marina (*Grote*)	162
2918. miselioides (*Guen.*)	163
2919. macerata (*Smith*)	164
2920. semilunata (*Grote*)	164
2921. inordinata (*Morr.*)	165
2922. leucodon (*Ev.*)	166
2923. cinefacta (*Grote*)	166
2924. centralis (*Smith*)	167
2925. unita (*Smith*)	168
2926. sora (*Smith*)	169
2927. barnesi (*Smith*)	169
2928. lona (*Streck.*)	170
2929. turbulenta (*Hübn.*)	171
2930. illyrica (*Frr.*)	171
2931. pabulatricula (*Brahm*)	172
2932. allecto (*Smith*)	173
2933. mactata (*Guen.*)	174
2934. ferens (*Smith*)	175
2935. separans (*Grote*)	175
2236. perpenoa (*Grote*)	176
2937. fraudulenta (*Staud.*)	177
2938. conciliata (*Butl.*)	177
2939. commixta (*Butl.*)	178
2940. indocilis (*Wlk.*)	179
2941. obscura (*Haw.*)	179
2942. tusa (*Grote*)	181
2943. divesta (*Grote*)	181
2944. cerivana (*Smith*)	182
2945. finitima (*Guen.*)	183
2946. basilinea (*Schiff.*)	183
2947. unanimis (*Hübn.*)	184
2948. fumosa (*Grote*)	185
2949. fumeola, *Hmpsn.*	186
2950. binotata (*Wlk.*)	186
2951. adnixa (*Grote*)	187
2952. paviæ (*Behr*)	188
2953. indirecta (*Grote*)	188
2954. catalina (*Smith*)	189
2955. characta (*Grote*)	190
2956. jocasta (*Smith*)	190
2957. erica (*Smith*)	191
2958. pausis (*Smith*)	192
2959. luteocinerea (*Smith*)	192
2960. dilara (*Streck.*)	193
2961. genetrix (*Grote*)	193
2962. modica (*Guen.*)	194
2963 modiola (*Grote*)	195
2964. mustelina (*Smith*)	195
2965. intermedia (*Leech*)	196
2966. cuneata (*Leech*)	196
2967. intermixta (*Leech*)	197
2968. ethnica (*Smith*)	198
2969. parcata (*Smith*)	198
2970. commoda (*Wlk.*)	199
2971. enigra (*Smith*)	199
2972. espumosa (*Dogn.*)	200
2973. opposita (*Wlk.*)	200
2974. consummata (*Wlk.*)	201
2975. siderifera (*Moore*)	202
2976. connivens (*Feld.*)	203
2977. dinavana (*Beth.-Baker*)	203
2978. niveiplaga (*Wlk.*)	204
2979. fasciata (*Leech*)	204
2980. rubrirena (*Treit.*)	205
2981. furva (*Schiff.*)	206
2982. anceps (*Schiff.*)	207
2983. oblonga (*Haw.*)	208
2984. geminimacula (*Dyar*)	209
2985. impulsa (*Guen.*)	210
2986. brunnea (*Leech*)	210
2987. secalis (*Linn.*)	211
2988. chalcirena (*Püng.*)	212
2989. ascoldis (*Oberth.*)	213
2990. polychroa, *Hmpsn.*	214
2991. xylophila (*Wlk.*)	214
2992. lacruma (*Schaus*)	215
Paratrachea, *Hmpsn.*	216
2993. laches (*Druce*)	216
2994. chalybeata (*Moore*)	217
Œdiplexia, *Hmpsn.*	218
2995. mesophæa, *Hmpsn.*	218
Euplexia, *Steph.*	219
2996. catephiodes, *Hmpsn.*	219
2997. sinuata, *Moore*	220
2998. pectinata, *Warr.*	221
2999. plumbeomarginata, *Hmpsn.*	224
3000. illustrata, *Græs.*	225
3001. albovittata, *Moore*	226
3002. fasciata, *Hmpsn.*	226
3003. lætevirens (*Oberth.*)	227
3004. decorata (*Moore*)	228
3005. gemmifera (*Wlk.*)	229
3006. novæguineæ (*Beth.-Baker*)	229
3007. calamistrata (*Moore*)	230
3008. chlorerythra, *Swinh.*	231
3009. picturata, (*Leech*)	231
3010. discisignata, *Moore*	232
3011. striatovirens, *Moore*	233
3012. rhoda, *Hmpsn.*	233
3013. amaranta, *Feld.*	234
3014. chalybsa, *Hmpsn.*	235
3015. plumbeola, *Hmpsn.*	225
3016. saldanha, *Feld.*	236
3017. albonota, *Hmpsn.*	237

Euplexia (*con.*). Page
3018. poliochroa, *Hmpsn.*.... 237
3019. augens, *Feld.* 238
3020. debilis, *Butl.* 238
3021. triplaga, (*Wlk.*) 239
3022. melanocycla, *Hmpsn.*.. 239
3023. lucipara (*Linn.*) 240
3024. semifascia (*Wlk.*) 241
3025. azyga, *Hmpsn.*..... 242
3026. melanistis, *Hmpsn.*.... 243
3027. aureopuncta, *South* 243
3028. magniclavis (*Hmpsn.*) . 244
3029. prolifera (*Wlk.*) 244
3030. metallica (*Wlk.*) 245
3031. harfordi (*Hmpsn.*) 245
3032. erythriris, *Hmpsn.* 246
3033. adamantina, *Turner* .. 247
3034. signata, *Lower*..... 247
3035. polycmeta, *Turner* 248
3036. callisina, *Turner* 248
3037. leucostigma, *Turner* .. 249
Ancara, *Wlk.* 249
3038. cebea (*Beth.-Baker*) .. 250
3039. griseola (*Beth.-Baker*) 250
3040. replicans, *Wlk.* 251
3041. obliterans, *Wlk.* 252
3042. anæmica, *Hmpsn.* 253
3043. glaucochlora, *Hmpsn.*.. 253
3044. viridipicta, *Hmpsn.*.... 254
Speocropia, *Hmpsn.*..... 255
3045. scriptura (*Wlk.*) 256
3046. trichroma (*Herr.-Schäff.*) 256
3047. ænyra (*Druce*)..... 257
3048. leucosticta, *Hmpsn.* .. 258
3049. randa (*Schaus.*) 258
3050. chromatica, *Hmpsn.* .. 259
3051. eugrapha, *Hmpsn.* 260
Cropia, *Wlk.*..... 260
3052. subapicalis (*Wlk.*) 261
3053. indigna (*Wlk.*)..... 261
3054. cedica (*Cram.*)..... 263
3055. phila (*Druce*) 264
3056. plumbicincta, *Hmpsn.*.. 264
3057. viridimicans, *Druce*.... 265
3058. hadenoides, *Wlk.* 265
3059. carnitincta, *Hmpsn.*.... 266
3060. aleuca (*Hmpsn.*)..... 267
3061. connecta (*Smith*) 267
3062. poliomera, *D. Jones* .. 268
3063. infusa (*Wlk.*) 269
3064. minthe (*Druce*) 270
3065. templada (*Schaus*) 270
Heterochroma, *Guen.* 271
3066. chloegrapha, *Hmpsn.* .. 271
3067. phytolacca (*Sepp*) 273

Page
3068. bellona (*Feld.*)..... 274
3069. thermida, *Hmpsn.* 275
3070. albipuncta, *D. Jones* .. 276
3071. insignis (*Wlk.*) 276
3072. amphion (*Druce*)..... 277
3073. sarepta (*Druce*) 278
3074. hypatia (*Druce*) 278
3075. eriopioides, *Guen.* 279
3076. hadenoides, *Guen.*... .. 280
3077. luma (*Druce*) 281
3078. chlorographa, *Hmpsn.* . 281
3079. beryllus (*Guen.*) 282
3080. lineata (*Druce*) 283
3081. berylloides, *Hmpsn.* .. 283
Atrephes, *Hmpsn.* 284
3082. albiluna, *Hmpsn.*..... 284
3083. phocea, *D. Jones* 285
Eucropia, *Hmpsn.* 286
3084. pallirena (*Feld.*) 286
Perigeodes, *Hmpsn.*..... 287
3085. poliomera, *Hmpsn.* 287
3086. lignigera (*Wlk.*) 288
3087. tricycla (*Guen.*) 289
3088. magna (*Hmpsn.*) 289
3089. malayica (*Snell.*)..... 290
3090. rectivitta (*Moore*) 291
Perigea, *Guen.*..... 292
3091. leucoptya, *Dogn.*..... 292
3092. apameoides, *Guen.* 293
3093. subaurea, *Guen.* 294
3094. semiumbrosa (*Saalm.*) . 295
3095. imitata (*Druce*) 296
3096. mimica, *Hmpsn.* 297
3097. simulatrix, *Hmpsn.*.... 298
3098. eriopoda (*Herr.-Schäff.*). 299
3099. cupentia (*Cram.*)..... 305
3100. griseirena, *Hmpsn.* 306
3101. leprosa (*Hmpsn.*) 307
3102. poliopasta, *Hmpsn.*.... 308
3103. quadrimacula (*Mab.*) .. 308
3104. glaucoptera (*Guen.*) .. 309
3105. leucostrota, *Hmpsn.* .. 310
3106. grandirena (*Hmpsn.*) .. 310
3107. hippia, *Druce* 311
3108. calma (*Druce*) 312
3109. discincta (*Butl.*) 312
3110. siderea (*Leech*) 313
3111. stellata (*Moore*) 314
3112. contigua (*Leech*) 314
3113. cyclica, *Hmpsn.* 315
3114. leucospila (*Wlk.*) 315
3115. albomaculata (*Moore*).. 316
3116. atricuprea, *Hmpsn.*.... 316
3117. confluens, *Hmpsn.* 317
3118. subornata, *Wlk.* 317
3119. stelligera, *Guen.* 318

Page

3120. africana, *Schaus* 319
3121. purpurea, *Druce* 319
3122. parva (*Leech*) 320
3123. abyda (*Feld.*) 321
3124. albolabes, *Grote* 321
3125. albigeroides, *Dogn.*..... 322
3126. roxana (*Druce*) 323
3127. dolorosa (*Wlk.*) 324
3128. galaxia, *Butl.* 324
3129. dinava, *Beth.-Baker* .. 325
3130. punctirena (*Wlk.*) 326
3131. dentistrigata (*Wlk.*) .. 326
3132. circuita, *Guen.*..... 327
3133. albigera, *Guen.* 328
3134. carcoma, *Dogn.* 329
3135. sufficiens, *Wlk.* 329
3136. concisa (*Wlk.*)..... 330
3137. confundens (*Wlk.*) 331
3138. sutor, *Guen.*..... 331
3139. capensis (*Guen.*) 332
3140. lineata (*Druce*) 334
3141. cenola, *Schaus*..... 335
3142. tetera (*Wlk.*) 335
3143. griseata (*Leech*) 336
3144. fuliginosa (*Leech*) 336
3145. vacillans (*Wlk.*) 337
3146. selenosa, *Guen.* 337
3147. berinda, *Druce*..... 338
3148. mustia, *Dogn.* 339
3149. agalla (*Dogn.*)..... 340
3150. bahamica, *Hmpsn.* 340
3151. punctifera (*Wlk.*) 341
3152. secorva, *Schaus* 342
3153. rubrifusa, *Druce* 343
3154. agnonia, *Druce* 343
3155. parastichtoides, *Hmpsn.* 344
3156. leucanioides, *Hmpsn.* .. 344
3157. xylophasioides, *Guen.* .. 345
3158. xanthioides, *Guen.* 346
3159. abstemia, *Guen.* 346
3160. perparvula, *Schaus* 347
3161. ethiopica, *Hmpsn.* 347
3162. spicea, *Guen.* 348
3163. metarhoda, *Hmpsn.* .. 349
3164. pyrostigma, *Hmpsn.* .. 350
3165. octophora, *Hmpsn.* 350
3166. leucopis, *Hmpsn.* 351
3167. pyrosticta, *Druce* 351
3168. naolina (*Schaus*)..... 352
3169. ignitincta (*Mssn.*) 352
3170. multipunctata, *Druce* .. 353
Microplexia, *Hmpsn.* 354
3171. elegans (*Saalm.*) 354
3172. albopicta (*Saalm.*) 355
3173. aurantiaca (*Saalm.*).... 356
3174. muscosa (*Saalm.*) 356

Page

3175. ferrea, *Hmpsn.* 357
3176. nephelea (*Mab.*) 357
3177. discreta (*Saalm.*)..... 358
Arboricornis, *Hmpsn.* 358
3178. rubra, *Hmpsn.*..... 359
3179. chrysopepla, *Hmpsn.* .. 359
Corythurus, *Hmpsn.* 360
3180. nocturna, *Hmpsn.* 360
Oligia, *Hübn.* 361
3181. hypothermes, *Hmpsn.* . 362
3182. melanodonta, *Hmpsn.*.. 362
3183. ptyophora, *Hmpsn.*.... 363
3184. nadgani (*Hmpsn.*) 364
3185. ypsilon (*Butl.*)..... 368
3186. paupera (*Staud.*)..... 368
3187. angusta (*Butl.*) 369
3188. glaucescens (*Butl.*).... 370
3189. pallidisca (*Moore*) 370
3190. glaucostigma (*Hmpsn.*). 371
3191. vulgaris (*Butl.*) 372
3192. sordida (*Butl.*)..... 372
3193. chasiana (*Hmpsn.*) 373
3194. ophiogramma (*Esp.*) .. 374
3195. albirivula, *Hmpsn.* 375
3196. violacea (*Grote*) 375
3197. bridghami (*Grote & Rob.*)..... 376
3198. egens (*Wlk.*) 377
3199. fasciuncula (*Haw.*).... 377
3200. tapeta (*Smith*)..... 378
3201. scolopacina (*Esp.*) 379
3202. dinava (*Beth.-Baker*) .. 380
3203. fractilinea (*Grote*) 380
3204. strigilis (*Clerck*) 381
3205. instructa (*Wlk.*) 382
3206. ambigua (*Wlk.*) 383
3207. exhausta (*Smith*)..... 384
3208. una (*Streck.*) 385
3209. minuscula (*Morr.*) 385
3210. misera (*Grote*)..... 385
3211. arcta (*Led.*) 386
3212. arctides (*Staud.*)..... 387
3213. diversicolora (*Morr.*) .. 388
3214. vulnerata (*Butl.*)..... 388
3215. leuconephra (*Ping.*) .. 389
3216. literosa (*Haw.*) 389
3217. semicana (*Wlk.*) 390
3218. subjuncta (*Smith*) 391
3219. tousa (*Grote*) 392
3220. lævigata (*Smith*)..... 392
3221. furuncula (*Schiff.*) 393
3222. captiuncula (*Treit.*).... 394
3223. havorthi (*Curt.*) 395
3224. obtusa (*Smith*)..... 396
3225. includens (*Wlk.*)..... 396
3226. nyctichroa, *D. Jones* .. 397

Page

Agroperina, *Hmpsn.* 398
3227. dubitans (*Wlk.*) 398
3228. cogitata (*Smith*) 399
3229. lateritia (*Hüfn.*) 400
3230. illustra (*Smith*) 401
3231. fervida, *Hmpsn.* 402
3232. conradi (*Grote*) 402
3233. lutosa (*Andrews*) 403
3234. helva (*Grote*) 403
3235. inficita (*Wlk.*) 404
3236. morna (*Streck.*) 405
Œderemia, *Hmpsn.* 405
3237. diadela (*Püng.*) 406
3238. lithoplasta (*Püng.*) 406
3239. medialis, *Hmpsn.* 407
3240. umovi (*Ev.*) 408
Eremobia, *Steph.* 408
3241. amœna (*Staud.*) 408
3242. ochroleuca (*Schiff.*) 409
3243. thula (*Streck.*) 410
3244. deccerti (*Gr. Grschm.*) . 411
3245. decipiens (*Alph.*) 412
3246. hilli (*Grote*) 413
3247. albertina, *Hmpsn.* 413
3248. claudens (*Wlk.*) 414
3249. unicincta (*Smith*) 415
3250. tenera (*Smith*) 415
3251. pungeleri (*Bartel*) 416
3252. zelleri (*Christ.*) 417
3253. alpigena (*Boisd.*) 418
3254. platinea (*Treit.*) 418
3255. ferrea (*Püng.*) 419
3256. montana (*Herr.-Schäff.*) 420
3257. mutica (*Christ.*) 420
3258. bischoffi (*Herr.-Schäff.*). 421
3259. alticola (*Smith*) 421
3260. zeta (*Treit.*) 422
3261. dumetorum (*Geyer*) 423
3262. maillardi (*Geyer*) 423
Euromœa, *Staud.* 425
3263. mixta, *Staud.* 425
Hypoplexia, *Hmpsn.* 426
3264. conjuncta, *Hmpsn.* 426
3265. algoa (*Feld.*) 427
3266. externa (*Wlk.*) 428
Heræma, *Staud.* 429
3267. mandschurica (*Græs.*) .. 429
Tæniosea, *Grote* 430
3268. discivaria (*Wlk.*) 430
Macronoctua, *Grote* 431
3269. onusta, *Grote* 431
Monoptya, *Hmpsn.* 432
3270. leucobasis (*Hmpsn.*) .. 432
Rhynchoplexia, *Hmpsn.* 433
3271. rubra (*Hmpsn.*) 433
3272. griseimarginata (*Hmpsn.*) 434

Page

Sidemia, *Staud.* 435
3273. christophi (*Alph.*) 435
3274. inutilis (*Alph.*) 436
3275. depravata (*Butl.*) 437
3276. spodopterodes, *Hmpsn.* . 437
3277. contecta (*Græs.*) 438
3278. effusoides (*Dogn.*) 439
3279. calidipes (*Guen.*) 440
3280. hipparion (*Druce*) 440
3281. speciosa (*Brem.*) 442
3282. subornata (*Staud.*) 443
3283. longula (*Grote*) 443
3284. judaica (*Staud.*) 444
3285. plebeja (*Staud.*) 445
3286. fissipuncta (*Haw.*) 445
3287. devastatrix (*Brace*) .. 446
3288. standfussi (*Wisk.*) 447
3289. zollicoferi (*Frr.*) 448
Ecbolemia, *Hmpsn.* 448
3290. misella (*Püng.*) 448
Margelana, *Staud.* 449
3291. versicolora (*Staud.*) .. 449
3292. lenis (*Staud.*) 450
3293. discrepans (*Staud.*) 451
3294. veternosa, *Püng.* 451
Centropodia, *Hmpsn.* 452
3295. scripturosa (*Ev.*) 453
3296. inquinata (*Mab.*) 453
Pseudohadena, *Alph.* 454
3297. laciniosa (*Christ.*) 455
3298. sergia, *Püng.* 456
3299. idumæa, *Püng.* 457
3300. schlumbergeri, *Püng.* .. 457
3301. chenopodiphaga (*Rmbr.*) 458
3302. commoda (*Staud.*) 459
3303. siri (*Ersch.*) 459
3304. pugnax, *Alph.* 460
3305. minuta, *Püng.* 460
3306. crassipuncta, *Püng.* 461
3307. roseonitens (*Oberth.*) .. 461
3308. immunda (*Ev.*) 462
3309. immunis (*Staud.*) 462
3310. pexa (*Staud.*) 463
3311. arvicola (*Christ.*) 463
3312. coluteæ (*Bienert*) 464
3313. indigna (*Christ.*) 464
3314. contumax (*Püng.*) 465
3315. armata (*Alph.*) 465
3316. jordana (*Staud.*) 466
Luperina, *Boisd.* 466
3317. jelsci (*Oberth.*) 467
3318. stipata (*Morr.*) 468
3319. niccerli (*Frr.*) 469
3320. burgessi (*Morr.*) 469
3321. posticata (*Harv.*) 470
3322. testacea (*Schiff.*) 471
3323. dumerili (*Dup.*) 471

	Page
3324. imbellis (*Staud.*)	472
3325. rubella (*Dup.*)	473
3326. dayensis, *Oberth.*	474
3327. ferrago (*Ev.*)	474
3328. popofensis (*Smith*)	475
3329. venosa (*Smith*)	475
3330. radicosa (*Græs.*)	475
3331. hedeni (*Græs.*)	476
3332. terrago (*Alph.*)	477
3333. subaquila (*Græs.*)	477
3334. innota, *Smith*	478
3335. trigona, *Smith*	478
3336. vicaria (*Püng.*)	479
3337. virguncula (*Smith*)	479
3338. extensa, *Smith*	480
3339. passer (*Guen.*)	480
3340. birnata (*Smith*)	481
Trichoplexia, *Hmpsn.*	482
3341. contradicta (*Smith*)	482
3342. exornata (*Möschl.*)	483
Lasiplexia, *Hmpsn.*	483
3343. cuprina (*Moore*)	484
3344. chalybeata (*Wlk.*)	485
3345. nubila (*Moore*)	486
3346. cyanea, *Hmpsn.*	486
Trigonophora, *Hübn.*	486
3347. meticulosa (*Linn.*)	487
3348. iris (*Guen.*)	488
3349. fuscomarginata (*Leech*)	489
3350. subpurpurea (*Leech*)	490
Chutapha, *Moore*	491
3351. interrupta (*Warr.*)	492
3352. vollastoni (*Beth.-Baker*)	492
3353. conservuloides(*Hmpsn.*)	493
3354. beatrix (*Butl.*)	494
3355. costalis, *Moore*	495
3356. olivacea (*Leech*)	496
3357. periculosa (*Guen.*)	497
Habryntis, *Led.*	498
3358. scita (*Hübn.*)	498
Conservula, *Grote*	499
3359. anodonta (*Guen.*)	500
3360. rosacea (*Saalm.*)	501
3361. sinensis, *Hmpsn.*	501
3362. indica (*Moore*)	502
3363. v-brunnea (*Guen.*)	502
3364. minor, *Holl.*	503
3365. cinisigna, *de Joan.*	504
Calpiformis, *Hmpsn.*	504
3366. craushayi (*Hmpsn.*)	504
Cobaliodes, *Dyar*	505
3367. accurata (*H. Edw.*)	506
3368. dubiosa (*Beth.-Baker*)	506
3369. angelica (*Smith*)	507
3370. franciscana (*Smith*)	508
Syrrusis, *Hmpsn.*	508
3371. notabilis (*Butl.*)	508
Diparopsis *Hmpsn.*	509
3372. castanea, *Hmpsn.*	510
Oroplexia, *Hmpsn.*	510
3373. decorata (*Moore*)	511
3374. retrahens (*Wlk.*)	512
3375. luteifrons (*Wlk.*)	513
3376. separata (*Moore*)	513
3377. tripartita (*Leech*)	514
3378. albiflexura (*Wlk.*)	514
Callargyra, *Hmpsn.*	515
3379. bayni, *Hmpsn.*	515
Selambina, *Wlk.*	516
3380. trajiciens, *Wlk.*	516
Argyrostrotis, *Hübn.*	517
3381. ditissima (*Wlk.*)	518
3382. amœnita (*Cram.*)	519
3383. bellinita (*Guen.*)	520
3384. meres (*Druce*)	521
3385. vau-aurea, *Hmpsn.*	522
3386. phraortes (*Druce*)	522
3387. scione (*Druce*)	523
3388. aurifundens (*Wlk.*)	524
3389. eubotes (*Druce*)	525
3390. decumana (*Feld.*)	525
3391. panamensis (*Druce*)	526
Data, *Wlk.*	526
3392. pratti (*Beth.-Baker*)	527
3393. aroa (*Beth.-Baker*)	528
3394. callopistrioides (*Moore*)	528
3395. thalpophiloides, *Wlk.*	529
Neopistria, *Hmpsn.*	530
3396. viridinotata, *Hmpsn.*	530
Eriopus, *Treit.*	531
3397. jamaicensis, *Möschl.*	532
3398. scriptiplena (*Wlk.*)	533
3399. pryeri (*Butl.*)	534
3400. phæogona, *Hmpsn.*	535
3401. indica (*Butl.*)	536
3402. æthiops (*Butl.*)	537
3403. albistriga (*Hmpsn.*)	538
3404. trilineata (*Wlk.*)	539
3405. ferruginea, *Hmpsn.*	540
3406. placodoides, *Guen.*	540
3407. quadrinotata (*Wlk.*)	541
3408. pulchrilinea (*Wlk.*)	542
3409. juventina (*Cram.*)	543
3410. xanthopera, *Hmpsn.*	545
3411. rivularis (*Wlk.*)	546
3412. albolineola, *Græs.*	547
3413. cyclopis, *Hmpsn.*	547
3414. floridensis, *Guen.*	548
3415. trinitensis, *Hmpsn.*	550
3416. argyrosticta (*Butl.*)	551
3417. maillardi, *Guen.*	551
3418. albomacula (*Leech*)	553

Page
Eriopus (*con.*).
3419. leucotoma, *Druce* 554
3420. exotica, *Guen.* 555
3421. duplicans (*Wlk.*)..... 556
3422. cœlisigna (*Hmpsn.*) .. 557
3423. insularis (*Butl.*) 557
3424. reticulata, *Pag.* 558
3425. chloriza, *Guen.*..... 559
3426. yerburi (*Butl.*)..... 560
3427. occidens, *Hmpsn.*..... 561
3428. repleta (*Wlk.*) 562
3429. mexicana (*Druce*) 564
3430. minuta (*Butl.*) 565
3431. minor (*Hmpsn.*) 566
3432. natalensis, *Hmpsn.* 567
3433. mollissima, *Guen.* 568
3434. aluensis (*Butl.*) 569
3435. elæastis, *Hmpsn.* 570
3436. guttulalis (*Hmpsn.*).... 571
3437. miranda, *Saalm.* 571
3438. nephrosticta, *Hmpsn.*.. 572
3439. strigilineata (*Hmpsn.*).. 572
3440. venata (*Leech*) 573
3441. microptera, *Hmpsn.*.... 574
3442. latreillei (*Dup.*) 575
3443. complicata (*Holl.*) 576
3444. monetifera, *Guen.* 577
3445. cordata (*Ljung.*) 578
3446. argentilinea (*Wlk.*).... 579
3447. variegata (*Swinh.*) 579
3448. leucobasis, *Hmpsn.*.... 581
3449. manta (*Swinh.*) 581
3450. clava (*Leech*) 582
3451. niveigutta (*Wlk.*) 583
3452. chlorocroa, *Hmpsn.* .. 583
Borbotana, *Wlk.* 584
3453. nivifascia, *Wlk.* 584
3454. cebeæ (*Beth.-Baker*) .. 585
3455. eceicei (*Beth.-Baker*) .. 586
3456. dinava (*Beth.-Baker*) .. 587
Telesilla, *Herr.-Schäff.*..... 587
3457. amethystina (*Hübn.*) .. 588
Callogonia, *Hmpsn.* 589
3458. virgo (*Treit.*) 589
Plusilla, *Staud.* 590
3459. rosalia, *Staud.* 590
Acherdoa, *Wlk.* 591
3460. ferraria, *Wlk.* 591
Fagitana, *Wlk.*..... 592
3461. littera (*Guen.*) 592
3462. datanidia (*Butl.*)..... 593
Phuphena, *Wlk.* 593
3463. cilix (*Druce*) 593
3464. fusipennis, *Wlk.* 594
3465. diagona, *Hmpsn.*..... 595
3466. transversa (*Schaus*).... 596

Page
3467. petrovna (*Schaus*) 597
3468. u-alba (*Guen.*)..... 597
3469. paralella (*Hmpsn.*) 598
3470. tura (*Druce*) 598
3471. obliqua (*Smith*) 599
Fracara, *Wlk.* 600
3472. viridata (*Stoll*)..... 600
Chytonix, *Grote* 600
3473. muscosa (*Schaus*)..... 601
3474. rufescens, *Hmpsn.* 601
3475. ethela (*Schaus*)..... 602
3476. chucha (*Schaus*) 603
3477. glaucescens, *D. Jones* .. 604
3478. chlorophila, *Druce* 605
3479. griseorufa, *Hmpsn.* 606
3480. mniochroa, *Hmpsn.*.... 607
3481. melanochlora (*Hmpsn.*). 607
3482. chlorostigma (*Harv.*) .. 608
3483. palliatricula (*Guen.*) .. 608
3484. parvimacula, *Smith* 609
3485. sensilis, *Grote* 610
3486. albonotata (*Staud.*).... 610
3487. nigribasalis, *Hmpsn.* .. 611
3488. laticlava, *Smith* 611
3489. fodinæ (*Oberth.*) 612
3490. albipunctata (*Hmpsn.*) . 613
3491. excurvata (*Hmpsn.*).... 613
3492. bogotica (*Wlk.*) 614
Pseuderastria, *Hmpsn.*..... 614
3493. larentica (*Hmpsn.*) 615
Bryomœa, *Staud.* 615
3494. melachlora, *Staud.* 616
Mionides, *Hmpsn.* 616
3495. lichenea, *Hmpsn.*..... 617
Poliobrya, *Hmpsn.* 617
3496. patula (*Püng.*)..... 617
Bryophila, *Treit.* 618
3497. nilgiria, *Moore*..... 621
3498. albiclava, *Hmpsn.* 622
3499. poliophæa, *Hmpsn.*.... 622
3500. deceptura (*Wlk.*)..... 623
3501. muralis (*Forst.*) 624
3502. perla (*Schiff.*) 625
3503. sarepta (*Barnes*) 626
3504. leucomelæna, *Hmpsn.*.. 627
3505. fascia (*Smith*) 627
3506. lichenea, *Hmpsn.*..... 628
3507. literata, *Moore*..... 628
3508. miltophæa, *Püng.* 629
3509. modesta, *Moore* 630
3510. plumbeola, *Staud.* 630
3511. eucta, *Püng.*..... 631
3512. ochrophæa, *Hmpsn.* .. 631
3513. vilis, *Püng.* 632
3514. simonyi, *Rghfr.* 632
3515. marginelota, *L. de Joan.* 633

Page

3516. virescens, *Hmpsn.* 633
3517. stictica (*Mén.*)..... 634
3518. algæ (*Fabr.*)..... 635
3519. receptricula (*Hübn.*) .. 636
3520. labecula, *Led.* 637
3521. petricolor, *Led.* 637
3522. tabora, *Staud.* 638
3523. distincta, *Christ.* 638
3524. galathea, *Mill.* 639
3525. ravula (*Hübn.*)..... 639
3526. mæonis, *Led.* 640
3527. paulina, *Staud.*..... 641
3528. ochrota, *Hmpsn.* 641
3529. thamanæa, *Püng.*..... 642
3530. semifascia (*Smith*) 643
3531. pineti, *Staud.* 643
3532. divisa (*Esp.*)..... 643
3533. dolopis, *Püng.* 645
3534. contristans, *Led.* 645
3535. petrea, *Guen.* 646
3536. felina (*Ev.*) 646
3537. granitalis (*Butl.*) 647
3538. palliola (*Borkh.*) 647
Harrisimemna, *Grote* 648
3539. trisignata (*Wlk.*)..... 649
3540. marmorata, *South* 650
Cerma, *Hübn.* 651
3541. cora, *Hübn.* 651
3542. marina, *Smith*..... 652
3543. cuerva, *Barnes*..... 653
3544. galva, *Streck.* 653
3545. olivacea, *Smith.* 653
Iambia, *Wlk.*..... 654
3546. nocturna (*Hmpsn.*) 654
3547. harmonica (*Hmpsn.*) .. 655
3548. thuaitesi (*Moore*)..... 656
3549. transversa (*Moore*) 657
3550. inferalis, *Wlk.* 657
3551. rufescens (*Hmpsn.*) 658
Iambiodes, *Hmpsn.* 659
3552. anormalis (*Hmpsn.*).... 659
Pariambia, *Hmpsn.* 660
3553. aprepes, *Hmpsn.* 660
Aucha, *Wlk.*..... 661
3554. variegata (*Oberth.*) 661
3555. flavomaculata (*Oberth.*). 662

Page

3556. tenebricosa (*Saalm.*) .. 663
3557. triphænoides (*Wlk.*) .. 663
3558 vesta, *Swinh.* 664
3559. nectens (*Wlk.*)..... 664
3560. velans, *Wlk.*..... 665
3561. villiana (*Swinh.*) 666
3562. minor, *Hmpsn.*..... 666
Polyphænis, *Boisd.* 667
3563. xanthochloris, *Boisd.* .. 667
3564. sericata (*Esp.*) 668
3565. subsericata, *Herr.-Schäff.*..... 669
3566. pulcherrima (*Moore*) .. 670
3567. oberthuri, *Staud.* 675
3568. confecta (*Wlk.*) 672
3569. subpulchra (*Alph.*) 673
3570. lucilla (*Butl.*) 674
3571. cinerescens (*Butl.*) 674
3572. diminuta (*Butl.*) 676
3673. inepta (*Butl.*) 677
3574. postflava (*Leech*) 677
3575. indica (*Moore*)..... 678
3576. ditata (*Lucas*) 678
Thalpophila, *Hübn.*..... 679
3577. matura (*Hüfn.*) 679
3578. vitalba (*Frr.*) 680
Neophænis, *Hmpsn.*..... 681
3579. respondens (*Wlk.*) 681
3580. frauenfeldi (*Feld.*) 682
3581. meterythra, *Hmpsn.* .. 683
3582. psittacea (*Schaus*) 684
Eccleta, *Turner*..... 685
3583. xuthophanes, *Turner* .. 685
Bryoleuca, *Hmpsn.* 686
3584. trilinea (*Beth.-Baker*).. 686
Meroleuca, *Hmpsn.* 687
3585. microglossa (*Rmbr.*) .. 687
Aræa, *Hmpsn.* 688
3586. attenuata, *Hmpsn.* 688
3587. indecora (*Feld.*) 689
Polygrammata, *Hübn.*..... 689
3588. hebraica (*Hübn.*)..... 690
Melagramma, *Hmpsn.*..... 691
3589. expetita (*Wlk.*) 691
Agrotisia, *Hmpsn.* 692
3590. subhyalina, *Hmpsn.*.... 692

CATALOGUE

OF

LEPIDOPTERA PHALÆNÆ.

Family NOCTUIDÆ.

Subfamily ACRONYCTINÆ.

Proboscis usually fully developed, often aborted or absent; palpi usually short, upturned or porrect, the 3rd joint sometimes long and dilated at extremity; frons sometimes with rounded prominence with corneous plate below it, or with corneous processes of various forms; eyes naked, without bristly cilia from their margins, the eyes usually large and round, rarely small and reniform; antennæ usually ciliated, sometimes serrate or pectinated, more rarely laminated or almost simple; head and thorax clothed with hair and scales when there are usually spreading or divided crests on the pro- and metathorax, sometimes with a flattened crest on prothorax projecting backwards, or a sharp triangular crest or dorsal ridge-like crest, or clothed with hair only, the tegulæ rarely produced dorsally into a ridge, or in one or two genera produced behind into a slight hood over the thorax; tibiæ without spines, the fore tibia sometimes with one or more terminal claws; the proximal joints of fore tarsi in a few genera with a series of curved claw-like spines; abdomen with dorsal series of crests, one crest at base only, or without crests, the crests on medial segments sometimes very large, in *Argyrostrotis* the basal crest very long and forked, in *Acroriodes* forming a large double ridge. Wings usually rather broad and triangular, sometimes long and narrow, the termen usually evenly curved and more or less crenulate, sometimes angled at middle or excised below apex or at tornus, where there is in a

few genera a scale-tooth; fore wing with vein 1 *a* weak, not anastomosing with vein 1 *b*, 1 *c* absent; 2 from middle of cell or in one or two cases from near its extremity; 3 and 5 from near lower angle, in *Euplexidia* vein 5 almost straight and from just below middle of discocellulars; 6 from upper angle or just below it; 9 from 10 anastomosing with 8 to form the areole, in a few genera the areole absent and either vein 7 or 10 from the cell, vein 9 being sometimes absent; 11 from cell. Hind wing with veins 1 *a* and *b* present, 1 *c* absent; 3, 4 from lower angle of cell, rarely stalked; 5 obsolescent from or from below middle of discocellulars; 6, 7 from upper angle or slightly stalked; 8 arising free, then bent downwards and touching the cell, then again diverging; in *Stilbia* and allies and a few other genera with vein 8 anastomosing with the cell to or to beyond middle.

In the genera without an areole its absence appears to have been always caused by reduction from forms which once possessed it, as it is minute in some of their allies.

In *Eriopus* the males of most of the species have secondary sexual developments of the antennæ, the basal part of the shaft being thickened with an angular projection near its middle, often with scale-teeth or long bristles beyond it, the legs also having greatly-developed tufts of hair of various forms; in two species the males have a large curved corneous hook on the ventral surface of abdomen projecting backwards from the preanal plate.

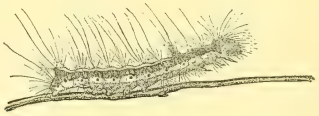


Fig. 1.—Larva of *Acronycta psi*. ¾.

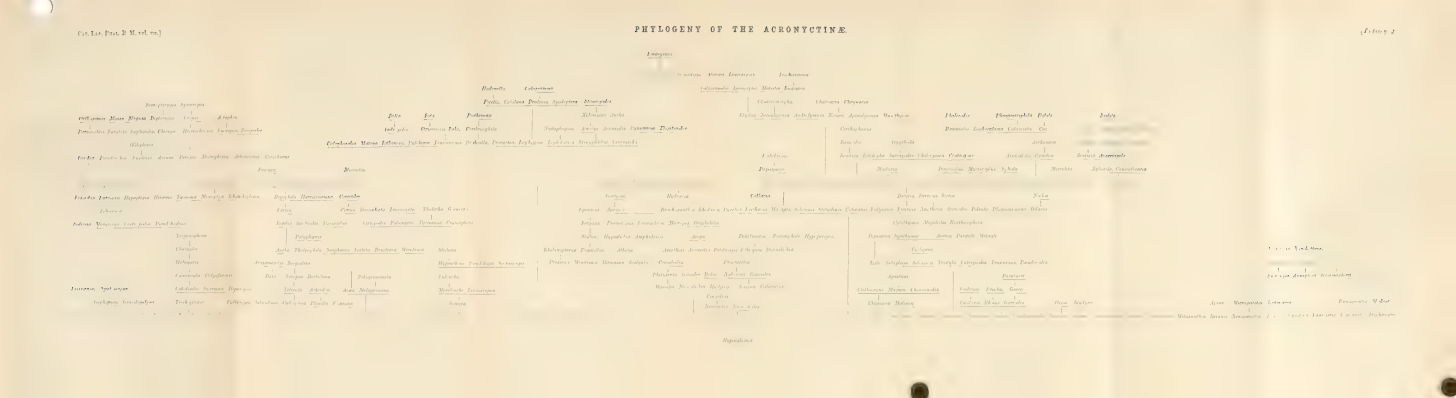
The larvæ are usually smooth, the warts with one hair; all the prolegs present, the 12th somite with more or less developed dorsal hump.

In *Acronycta* the larvæ sometimes have the hairs spatulate at extremity; many species have tufts of long hair from the warts supplemented by bunches of fine feathery hairs, whilst others have numerous secondary hairs from the skin, and large dorsal pencils of hair.

In *Nonagria* and its allies the larvæ bore in reeds and are almost without hairs, whilst in *Hydrœcia* and the allied genera the larvæ bore in the stems and roots of various plants.

The genera *Perigea*, *Bryophila*, and a few others come very close in structure to the subfamily *Erastrianæ* as regards the development of vein 5 of the hind wing, the former resembling *Amyna* and the latter *Lithacodia*, whilst *Tristula*, *Pseudina*, and one or two others have a facies much like that of *Tarache*, the essential difference in the subfamilies being that the larvæ of the *Acronyctinæ* have all the

PHYLOGENY OF THE ACRONYCTINÆ



prolegs fully developed, whilst in the *Erastrianæ* the 1st or first two pairs are more or less aborted.

From the *Acronyctinæ* have arisen (1) the *Cucullianæ* with ciliated eyes, most of the genera resembling the *Trachea-Luperina* series, *Cosmia* and allies resembling *Enargia*, and *Cucullia* having some affinity to *Epimecia*; (2) the *Hadeninæ* with hairy eyes, most of the genera resembling the *Trachea-Luperina* series, whilst *Leucania* and its allies resemble the *Sesamia* group; (3) the *Agrotinæ* with spiny tibiæ, most of the genera again resembling the *Trachea-Luperina* series, whilst *Heliothis* and its allies have close affinities with the *Eutricopis* group; (4) the *Agaristidæ* which have arisen from the *Apina-Idalima* group of genera, all these being parallel developments from primitive forms of *Acronyctinæ*.

Key to the Genera.

A. Fore wing without an areole.
  a. Fore wing with vein 7 stalked with 8, 9.
    a^1. Fore wing with vein 10 stalked with 8, 9, or 9 absent.
      a^2. Frons with rounded prominence with raised edges.
        a^3. Proboscis absent; hind wing with vein 8 anastomosing with the cell to middle, then approximated to it to extremity ... STOMAFRONTIA, p. .
        b^3. Proboscis fully developed.
          a^4. Hind wing with vein 8 approximated to the cell to middle ..... CEPHALOSPARGATA, p. .
          b^4. Hind wing with vein 8 anastomosing with the cell near base only ..... PROMETOPUS, p. .
      b^2. Frons with slight rounded prominence.
        a^3. Abdomen with dorsal crest at base ..... EMARGINEA, p. .
        b^3. Abdomen without crests ..... MICRAPATETIS, p. .
      c^2. Frons without prominence.
        a^3. Abdomen with dorsal series of crests.
          a^4. Fore wing with the termen angled at middle ..... NEOPISTRIA, p. 530.
          b^4. Fore wing with the termen evenly curved.
            a^5. Fore wing with vein 9 absent ..... CINGALESA, p. .
            b^5. Fore wing with vein 9 present ..... ARBORICORNIS, p. 358.
        b^3. Abdomen without crests.
          a^4. Fore wing with vein 9 absent; metathorax with paired crests ..... NEOLAPHYGMA, p. .
          b^4. Fore wing with vein 9 present.
            a^5. Proboscis aborted, small ..... NEOLITA, p. .
            b^5. Proboscis fully developed.
              a^6. Metathorax with spreading crest ..... NEOSTROTIA, p. .
              b^6. Metathorax without crest.
                a^7. Tarsi with the 1st joint tufted with scales ..... LOPHOTARSIA, p. .
                b^7. Tarsi with the 1st joint not tufted with scales ..... CLOSTEROMORPHA, p. .
    b^1. Fore wing with vein 10 from the cell.
      a^2. Abdomen with dorsal series of crests.
        a^3. Pro- and metathorax with spreading crests.
          a^4. Proboscis aborted, minute ..... NEOMONODES, p. .
          b^4. Proboscis fully developed ..... FEACARA, p. 600.

b^3. Thorax without crests ..... CHASMINODES, p.
b^2. Abdomen with dorsal crest at base only.
a^3. Fore wing with the termen angled at vein 4. GONOSTYGIA, p.
b^3. Fore wing with the termen strongly excurved at middle ..... NEOCALYMNIA, p.
c^2. Abdomen without crests.
a^3. Frons with rounded prominence ..... XENOPSEUSTIS, p.
b^3. Frons without prominence ..... MICROMONODES, p.
b. Fore wing with veins 8, 9, 10 stalked, 7 from cell.
a^1. Eyes small, reniform.
a^2. Frons with trilobate process ..... JANTHINEA, p.
b^2. Frons with rounded prominence with raised edges and central process.
a^3. Palpi upturned ..... MICRIANTHA, p.
b^3. Palpi porrect ..... APAUSTIS, p.
b^1. Eyes large, round.
a^2. Fore wing with the termen angled at vein 4. LEUCOSIGMA, p.
b^2. Fore wing with the termen not angled at vein 4 ..... BORBOTANA, p. 584.
c. Fore wing with veins 8, 9 stalked, 7 and 10 from cell.
a^1. Frons with bifid corneous plate from middle; abdomen without crests ..... EUTERPIODES, p.
b^1. Frons with rounded prominence; abdomen with dorsal crests on basal segments ..... MUSOTHYMA, p.

B. Fore wing with areole.
a. Fore tibia with one or more claws on outer side.
a^1. Frons with heart-shaped corneous prominence ..... POLENTA, p.
b^1. Frons with trilobate process ..... NARTHECOPHORA, p.
c^1. Frons smooth ..... CENTROPODIA, p. 452.
b. Fore tibia with small claws at inner and outer sides; frons with pointed prominence connected by a keel with the trilobate plate below it, which is produced to lateral points below ..... PARÆGLE, p.
c. Fore tibia with large semilunar plate at extremity, and large and small claws on inner side ..... TRIOCNEMIS, p.
d. Fore tibia with long curved claw on inner side and two claws on outer ..... DERRIMA, p.
e. Fore tibia with long curved claw on inner side and small claw on outer.
a^1. Frons with truncate prominence with raised edges ..... PLAGIOMIMICUS, p.
b^1. Frons smooth, with corneous plate below it. PSEUDACONTIA, p.
f. Fore tibia with claw on inner side only.
a^1. Frons with shovel-shaped plate at middle and corneous plate below it ..... PINACOPLUS, p.
b^1. Frons with pointed prominence with trilobate plate below it ..... METÆGLE, p.
c^1. Frons with corneous prominence with raised edges and central process.
a^2. Proboscis aborted ..... CENTROGONE, p.
b^2. Proboscis fully developed.
a^3. Eyes small, reniform ..... XANTHOTHRIX, p.
b^3. Eyes large, round.
a^4. Thorax clothed with rough scales; pro- and metathorax with crests; patagia curled upwards at extremity ..... CHALCOPASTA, p.
b^4. Thorax smoothly clothed with scales.
a^5. Pro- and metathorax with slight crests. FOTA, p.
b^5. Pro- and metathorax without crests ... ANTAPLAGA, p.

c^4. Thorax clothed with hair and hair-like scales ..... CALOPHASIDIA, p. .
d^4. Thorax clothed with hair only, the pro- and metathorax with spreading crests... FALA, p. .
d^1. Frons with corneous prominence with raised edges, its lower edge produced to a point.
a^2. Fore wing with the apex produced and acute ..... STIRIA, p. .
b^2. Fore wing with the apex round ..... CIRRHOPHANUS, p. .
c^1. Frons with corneous prominence with raised edges not produced to a point.
a^2. Proboscis aborted, minute ..... METOPOPLUS, p.
b^2. Proboscis fully developed.
a^3. Fore wing with the termen excurved at middle and oblique towards tornus ..... BASILODES, p. .
b^3. Fore wing with the termen evenly curved. STIBADIUM, p. .
f^1. Frons with rounded prominence with corneous plate below it ..... XANTHIRIA, p. .
g^1. Frons without prominence.
a^2. Proboscis aborted, small.
a^3. Pro-and metathorax with spreading crests. PSEUDOLIGIA, p. .
b^3. Prothorax without crest, metathorax with large crest ..... OXYCNEMIS, p. .
b^2. Proboscis fully developed.
a^3. Thorax smoothly clothed with scales.
a^4. Pro- and metathorax with spreading crests ..... COPANARTA, p. .
b^4. Thorax without crests ..... LEUCOCNEMIS, p. .
b^3. Thorax roughly clothed with hair and hair-like scales ..... CENTRARTHA, p. .
g. Fore tibia without claws.
a^1. Fore tarsus with curved claw-like spines on outer side of 1st joint.
a^2. Frons with truncate conical prominence with raised edges.
a^3. Proboscis aborted, small; abdomen with dorsal crest at base only ..... MYCTEROPLUS, p. .
b^3. Proboscis fully developed; abdomen without crests.
a^4. Thorax clothed chiefly with scales, the metathorax with paired crests ..... OMPHALETIS, p. .
b^4. Thorax clothed with hair only and without crests ..... PSECTROTARSIA, p. .
b^2. Frons with rounded prominence with corneous plate below it; proboscis aborted... MICROPIA, p. .
c^2. Frons with vertical ridge.
a^3. Abdomen with dorsal crest at base only... CALLARGYRA, p. 515.
b^3. Abdomen without crests ..... SCOTOCAMPA, p. .
d^2. Frons without prominence.
a^3. Prothorax with sharp ridge-like crest, metathorax with spreading crest; abdomen with basal crest ..... RHODŒCIA, p. .
b^3. Pro- and metathorax with spreading crests; abdomen without crests ..... PSEUDOHADENA, p. 454.
b^1. Fore tarsus without claw-like spines on outer side of 1st joint.
a^2. Frons with truncate corneous prominence with raised edges, its lower edges produced to a trilobate plate with corneous plate below it.
a^3. Thorax clothed chiefly with scales ..... CYTOTHYMIA, p. .
b^3. Thorax clothed with rough hair and hair-like scales ..... MEGALODES, p. .

*b*². Frons with long trilobate process and corneous plate below it.
*a*³. Proboscis aborted, small.
*a*⁴. Palpi oblique, reaching to beyond frons . AZENIA, p. .
*b*⁴. Palpi porrect, very short ..... PSEUDINODES, p. .
*b*³ Proboscis fully developed.
*a*⁴ Eyes small, reniform ..... STEMMAPHORA, p. .
*b*⁴. Eyes large, round.
*a*⁵. Palpi extending to just beyond frons.
*a*⁶. Metathorax with spreading crests ... TRISTYLA, p. .
*b*⁶. Thorax without crests ..... MUDARIA, p. .
*b*⁵. Palpi very short and not reaching as far as frons ..... SYNTHYMIA, p. .
*c*². Frons with long bilobate corneous process.
*a*³. Proboscis aborted, small.
*a*⁴. Frons with long triangular plate below it ..... PROTHRINAX, p. .
*b*⁴. Frons with short plate below it excised in front.
*a*⁵. Thorax clothed with hair and scales, the pro- and metathorax with spreading crests ..... STILBINA, p. .
*b*⁵. Thorax clothed almost entirely with scales and without crests ..... CYCLOPERA, p. .
*c*⁵. Thorax clothed with hair and hair-like scales and without crests ..... OCHROCALAMA, p. .
*c*⁴. Frons without plate below it ..... ARCHANARA, p. .
*b*³. Proboscis fully developed.
*a*⁴. Metathorax with spreading crest ..... DIPINACIA, p. .
*b*⁴. Metathorax without crest ..... ÆGLE, p. .
*d*². Frons with rounded prominence with shovel-shaped process at middle and corneous plate below it.
*a*³. Proboscis absent ..... HYPEUTHINA, p. .
*b*³. Proboscis aborted, small.
*a*⁴. Frons with the corneous process somewhat pointed at extremity and keeled below ..... DIPAROPSIS, p. 509.
*b*⁴. Frons with the corneous process not pointed or keeled.
*a*⁵. Palpi upturned ..... PALAFRONTIA, p. .
*b*⁵. Palpi obliquely porrect ..... STIRIODES, p. .
*c*³. Proboscis fully developed.
*a*⁴. Eyes small, reniform ..... APINA, p. .
*b*⁴. Eyes large, round.
*a*⁵. Thorax clothed chiefly with scales.
*a*⁶. Frons with trilobate plate below it; hind wing with veins 3, 4 from cell... COPIBRYOPHILA, p. .
*b*⁶. Frons with triangular plate below it; hind wing with veins 3, 4 stalked ... PRODICELLA, p. .
*b*⁵. Thorax clothed with hair only ..... IPANICA, p. .
*e*². Frons with truncate conical prominence with raised edges.
*a*³. Abdomen with dorsal crests on basal segments.
*a*⁴. Proboscis aborted, minute ..... ATREPHES, p. 284.
*b*⁴. Proboscis fully developed.
*a*⁵. Thorax with slight double ridge-like crest ..... STAUROPIDES, p. .
*b*⁵. Pro- and metathorax with spreading crests ..... SPEOCROPIA, p. 255.
*c*⁵. Prothorax without crest, metathorax with large spreading crest ..... EUDRYAS, p. .

d^5. Thorax without crests.
a^6. Thorax clothed with rough hair and scales mixed ..... PARATUERTA, p. .
b^6. Thorax clothed with hair and hair-like scales.
a^7. Palpi upturned ..... SEUDYRA, p. .
b^7. Palpi porrect ..... GERRA, p. .
b^3. Abdomen with dorsal crest at base only.
a^4. Prothorax with spreading crest.
a^5. Frons with flattened vertical process to the frontal prominence ..... RUACODES, p. .
b^5. Frons with long central process hollowed out in front to the frontal prominence.
a^6. Proboscis aborted, minute ..... SYNCALAMA, p. .
b^6. Proboscis fully developed ..... HADENELLA, p. .
c^6. Frons without central process to the frontal prominence.
a^6. Proboscis aborted ..... ECBOLEMIA, p. 448.
b^6. Proboscis fully developed.
a^7. Hind wing with vein 5 from middle of discocellulars ..... CATAMECIA, p. .
b^7. Hind wing with vein 5 from below middle of discocellulars.
a^8. Frontal prominence large ..... PROCRATERIA, p. .
b^8. Frontal prominence small ..... HYPOPERIGEA, p. .
b^4. Prothorax without crest.
a^5. Frons with truncate process in middle of prominence ..... NOCLOA, p. .
b^5. Frons without truncate process in middle of prominence.
a^6. Proboscis aborted, small ..... OSLARIA, p. .
b^6. Proboscis fully developed.
a^7. Frontal prominence large.
a^8. Palpi upturned.
a^9. Mesothorax with paired crests ... IAMBIODES, p. 659.
b^9. Mesothorax without crest ..... APOCALYMNIA, p. .
b^8. Palpi porrect.
a^9. Eyes small, reniform ..... AGARISTODES, p. .
b^9. Eyes large, round.
a^{10}. Thorax clothed with hair and scales mixed.
a^{11}. Patagia fringed with long rough hair and scales ..... OVIOS, p. .
b^{11}. Patagia normal.
a^{12}. Abdomen with fan-like crest formed of scales ..... RADINOCERA, p. .
b^{12}. Abdomen with tufted crest formed of hairs ..... EROCHA, p. .
b^{10}. Thorax clothed with hair only.
a^{11}. Patagia with the extremities turned upwards, the metathorax with paired crests ..... GERRODES, p. .
b^{11}. Patagia normal ..... CAULARIS, p. .
b^7. Frontal prominence very small.
a^8. Palpi upturned ..... THALATHA, p. .
b^8. Palpi porrect, the 3rd joint downturned and dilated at extremity ... LEUCOGONIA, p. .
c^3. Abdomen without dorsal crests.
a^4. Eyes small, reniform.
a^5. Frontal prominence with its lower edge produced to a corneous plate ..... AXENUS, p. .

b^5. Frontal prominence with its lower edge not produced to a corneous plate.
a^6. Frontal prominence with central process ..... MICROHELIA, p.
b^6. Frontal prominence without central process ..... HELIOTHODES, p.
b^4. Eyes large, round.
a^5. Frons with beak-shaped process from lower edge of prominence ..... CYTOCANIS, p.
b^5. Frons with flattened plate from lower edge of prominence, grooved in front. CALLŒCIA, p.
c^5. Frons with wedge-shaped process in middle of prominence ..... BASILICA, p.
d^5. Frons with rounded truncate process in middle of prominence ..... SELENISTIS, p.
e^5. Frons with vertical ridge in middle of prominence ..... ARGYRHODA, p.
f^5. Frons without process in middle of prominence.
a^6. Frontal prominence long.
a^7. Thorax clothed with hair and scales mixed; abdomen smoothly scaled.
a^8. Palpi upturned, the 3rd joint porrect. IDALIMA, p.
b^8. Palpi porrect.
a^9. Proboscis absent.
a^{10}. Prothorax with spreading crest. RABILA, p.
b^{10}. Prothorax without crest ..... EREMOCHROA, p.
b^9. Proboscis fully developed.
a^{10}. Frons with pointed corneous plate below it ..... MOLYENA, p.
b^{10}. Frons without corneous plate below it ..... RHOSUS, p.
b^7. Thorax clothed with hair only; abdomen clothed with rough hair.
a^8. Palpi upturned ..... AUCULA, p.
b^8. Palpi porrect ..... LEUCOVIS, p.
b^6. Frontal prominence short.
a^7. Thorax with broad dorsal ridge of scales.
a^8. Frons with the corneous prominence large..... PARACROBIA, p.
b^8. Frons with the corneous prominence small ..... THYATIRODES, p.
b^7. Metathorax with depressed crest; hind wing with veins 3, 4 stalked ... PAROMPHALE, p.
c^7. Thorax without crests.
a^8. Palpi with the 2nd joint reaching vertex of head; thorax clothed with hair and hair-like scales ..... STYGIATHETIS, p.
b^8. Palpi with the 2nd joint reaching middle of frons; thorax clothed with hair and scales mixed.
a^9. Palpi upturned, slender; fore wing with the termen excurved at middle and oblique towards tornus ..... SATRAPODES, p.
b^9. Palpi oblique, short; fore wing with the termen evenly curved ... DYSMILICHIA, p.
f^2. Frons with pointed prominence.
a^3. Eyes small, reniform ..... PSYCHOMORPHA, p.
b^3. Eyes large, round.
a^4. Abdomen with dorsal crests on basal segments.
a^5. Proboscis aborted, minute ..... ACHATODES, p.
b^5. Proboscis fully developed ..... CŒNOTOCA, p.

b^4. Abdomen with dorsal crest at base only.
a^5. Prothorax with sharp triangular ridge-like crest, the metathorax with divided crest ..... XANTHŒCIA, p.
b^5. Prothorax with divided crest, metathorax with spreading crest ..... XERÓCIRIS, p.
c^5. Thorax without crests.
a^6. Frons with beak-like pointed process; palpi with the 2nd joint very broadly scaled ..... APSARASA, p.
b^6. Frons with slight pointed prominence; palpi slender.
a^7. Palpi upturned ..... MAZUCA, p.
b^7. Palpi porrect ..... PROTOSEUDYRA, p.
c^4. Abdomen without crests.
a^5. Proboscis aborted, minute ..... CONICOFRONTIA, p.
b^5. Proboscis fully developed.
a^6. Thorax clothed almost entirely with scales ..... MICROLITA, p.
b^6. Thorax clothed with hair and hair-like scales ..... CŒNOBIA, p.
g^2. Frons with rounded prominence with transverse corneous plate at middle square in front ..... PHRAGMATIPHILA, p.
h^2. Frons with rounded prominence with vertical ridge at middle.
a^3. Abdomen with dorsal series of crests ..... EUCROPIA, p. 286.
b^3. Abdomen with dorsal crest at base only.
a^4. Palpi upturned ..... PARIAMBIA, p. 660.
b^4. Palpi porrect ..... METAXANTHIA, p.
c^3. Abdomen without crests ..... CHRYSOECIA, p.
i^2. Frons with rounded prominence with slight transverse ridge.
a^3. Frons with corneous plate below it.
a^4. Abdomen with dorsal crests on first two segments ..... CHALCOECIA, p.
b^4. Abdomen without crests ..... PRORACHIA, p.
b^3. Frons without corneous plate below it ... ŒDIPLEXIA, p. 218.
j^2. Frons with rounded prominence.
a^3. Abdomen with dorsal crests on basal segments.
a^4. Proboscis absent.
a^5. Pro- and metathorax with spreading crests ..... TUMIDIFRONTIA, p.
b^5. Pro- and metathorax without crests ... MIONIDES, p. 616.
b^4. Proboscis fully developed.
a^5. Pro- and metathorax with spreading crests ..... ŒDEREMIA, p. 405.
b^5. Pro- and metathorax without crests.
a^6. Thorax smoothly clothed with scales only ..... GOENYCTA, p.
b^6. Thorax clothed with rough hair and scales mixed ..... ZALISSA, p.
b^3. Abdomen with dorsal crest at base only.
a^4. Prothorax with spreading crest.
a^5. Fore wing with the termen oblique towards tornus.
a^6. Fore wing with scale-tooth at tornus . ECTOLOPHA, p.
b^6. Fore wing without scale-tooth at tornus ..... XYLOMŒA, p.

b^5. Fore wing with the termen evenly curved.
a^6. Build stout.
a^7. Fore wing with the termen crenulate. AMIANA, p.
b^7. Fore wing with the termen not crenulate ..... MATOPO, p.
b^6. Build slender ..... NEOMILICHIA, p.
b^4. Prothorax without crest.
a^5. Thorax clothed chiefly with scales.
a^6. Fore wing with the apex produced, the termen obliquely curved ..... FOTELLA, p.
b^6. Fore wing with the apex not produced, the termen more erect.
a^7. Antennæ laminate, almost simple ... TYCRACONA, p.
b^7. Antennæ ciliated.
a^8. Fore wing narrow, the margins subparallel ..... BRYOLYMNIA, p.
b^8. Fore wing triangular ..... TRICHOCOSMIA, p.
b^5. Thorax clothed with hair only ..... ERYTHRŒCIA, p.
c^3. Abdomen without dorsal crests.
a^4. Eyes small, elliptical.
a^5. Thorax clothed with rough hair and scales. ANNAPHILA, p.
b^5. Thorax smoothly scaled ..... MESOTROSTA, p.
b^4. Eyes large, round.
a^5. Metathorax with crest.
a^6. Prothorax with spreading crest.
a^7. Proboscis absent ..... ACOPA, p.
b^7. Proboscis aborted, small ..... HÆMASSIA, p.
c^7. Proboscis fully developed ..... CEA, p.
b^6. Prothorax without crest.
a^7. Proboscis aborted, minute.
a^8. Thorax clothed with hair and scales mixed ..... LEIOMETOPON, p.
b^8. Thorax clothed with hair only ..... SPHIDA, p.
b^7. Proboscis fully developed..... RABINOPTERYX, p.
b^5. Metathorax without crest.
a^6. Thorax clothed almost entirely with scales.
a^7. Proboscis aborted ..... MEROLEUCA, p. 687.
b^7. Proboscis fully developed.
a^8. Frons with corneous ridge above ... NEUMŒGENIA, p.
b^8. Frons without corneous ridge above.
a^9. Fore wing with the apex rather produced and acute..... XYLOSTOLA, p.
b^9. Fore wing with the apex rounded. ACOSMETIA, p.
b^6. Thorax clothed with hair and hair-like scales ..... ARCILASISA, p.
c^6. Thorax clothed with hair only..... OXYTHRES, p.
k^2. Frons with vertical flattened process with rounded edge..... EMBOLŒCIA, p.
l^2. Frons with transverse ridge.
a^3. Abdomen with dorsal series of crests ..... ANTHA, p.
b^3. Abdomen with dorsal crest at base only.
a^4. Pro- and metathorax with spreading crests ..... LEUCONYCTA, p.
b^4. Pro- and metathorax without crests..... POLYGRAMMATA, p. 689.
m^2. Frons smooth and without prominence.
a^3. Proboscis aborted or absent.
a^4. Abdomen with dorsal series of crests.
a^5. Prothorax without crest, metathorax with spreading crest ..... BRYOMŒA, p. 615.
b^5. Thorax without crests.
a^6. Palpi upturned, thickly scaled ..... ACHERDOA, p. 591.
b^6. Palpi porrect, slender..... POLIOBRYA, p. 617.

b^4. Abdomen with dorsal crest at base only.
b^5. Thorax clothed almost entirely with scales.
a^6. Prothorax with divided crest..... PHALERODES, p. .
b^6. Prothorax without crest.
a^7. Palpi with the 2nd joint reaching vertex of head..... PLUSILLA, p. 590.
b^7. Palpi with the 2nd joint reaching about middle of frons..... BRYOLEUCA, p. 686.
b^5. Thorax clothed with hair and hair-like scales.
a^6. Pro- and metathorax with spreading crests ..... CALAMISTIS, p. .
b^6. Pro- and metathorax without crests.
a^7. Fore wing very narrow and produced at apex ..... EULONCHE, p. .
b^7. Fore wing triangular ..... MEROLONCHE, p. .
c^4. Abdomen without crests.
a^5. Thorax clothed chiefly with scales.
a^6. Hind wing with vein 8 anastomosing with the cell to near extremity ..... ACYLITA, p. .
b^6. Hind wing with vein 8 anastomosing with the cell to middle..... DOERRIESA, p. .
c^6. Hind wing with vein 8 anastomosing with the cell near base only.
a^7. Pro- and metathorax with spreading crests..... ETHIOPICA, p. .
b^7. Pro- and metathorax without crests.
a^8. Palpi with the hair at extremity of 2nd joint produced to a point, the 3rd porrect..... DANTONA, p. .
b^8. Palpi with the 2nd joint slightly fringed with hair in front.
a^9. Palpi with the 3rd joint porrect... CILLA, p. .
b^9. Palpi with the 3rd joint upturned ..... AMOLITA, p. .
b^5. Thorax clothed with hair and hair-like scales.
a^6. Pro- and metathorax with spreading crests.
a^7. Palpi upturned; fore wing with the termen not crenulate.
a^8. Fore wing with the termen oblique towards tornus ..... NONAGRIA, p. .
b^8. Fore wing with the termen evenly curved..... SELICANIS, p. .
b^7. Palpi porrect; fore wing with the termen crenulate..... MARGELANA, p. 449.
b^6. Thorax without crests.
a^7. Fore wing with the apex produced and acute; hind wing with veins 3, 4 usually stalked, 5 from below middle of discocellulars ..... ACRAPEX, p. .
b^7. Fore wing with the apex not produced; hind wing with veins 3, 4 from cell, 5 from middle of discocellulars ..... PETILAMPA, p. .
c^5. Thorax clothed with hair only.
a^6. Metathorax with spreading crest ..... BELLURA, p. .
b^6. Thorax without crests.
a^7. Palpi upturned ..... SESAMIA, p. .

b^7. Palpi porrect.
a^8. Fore wing with the apex produced and acute ..... SIMYRA, p. .
b^8. Fore wing with the apex rounded ... EOGENA, p. .
b^3. Proboscis fully developed.
a^4. Abdomen with dorsal series of crests.
a^5. Thorax with double ridge-like crest.
a^6. Thorax clothed chiefly with scales.
a^7. Palpi with the 2nd joint broadly angled with hair in front ..... ORTHOGONICA, p. 45.
b^7. Palpi with the 2nd joint moderately fringed with hair in front.
a^8. Fore wing long and narrow, the termen not excised towards tornus.
a^9. Tegulæ produced at a slight dorsal ridge..... DELTA, p. .
b^9. Tegulæ not produced to a dorsal ridge.
a^{10}. Frons tufted with hair.
a^{11}. Fore wing very narrow, the termen very obliquely curved. MAGUSA, p. 55.
b^{11}. Fore wing broader, the termen more erect ..... PARASTICHTIS, p. 76.
b^{10}. Frons smooth with a slight corneous plate below it ..... XYLOMYGES, p. .
b^8. Fore wing shorter, the termen excised towards tornus.
a^9. Palpi with the 2nd joint reaching to about vertex of head ..... STENOPTERYGIA, p. 61.
b^9. Palpi with the 2nd joint reaching to about middle of frons.
a^{10}. Frons tufted with hair ..... DIPTERYGIA, p. 64.
b^{10}. Frons smoothly scaled ..... ACRORIA, p.
b^6. Thorax clothed with hair and hair-like scales ..... AGROPERINA, p. 398.
b^5. Thorax with broad ridge-like crest..... EURABILA, 109.
c^5. Prothorax with triangular crest.
a^6. Thorax clothed chiefly with scales ... LOPHOTYNA, p. .
b^6. Thorax clothed with hair and hair-like scales ..... PULCHERIA, p. .
c^6. Thorax clothed with hair only.
a^7. Fore wing with the termen excised below vein 4..... ..... TRIGONOPHORA, p 486.
b^7. Fore wing with the termen evenly curved.
a^8. Abdomen with the crests mixed with scales ..... CHUTAPHA, p. 491.
b^8. Abdomen with the crests formed of hair only ..... HABRYNTIS, p. 498.
d^5. Pro-, meso- and metathorax with large divided crests ..... MANIA, p. 49.
e^5. Pro- and metathorax with divided crests.
a^6. Thorax clothed chiefly with scales.
a^7. Abdomen dorsally flattened ..... CHECUPA, p. 111.
b^7. Abdomen not dorsally flattened.
a^8. Fore wing with vein 5 nearly straight, from just below middle of discocellulars..... EUPLEXIDIA, p. 110.
b^8. Fore wing with vein 5 curved, from just above lower angle of cell ..... TRACHEA, p. 113.

b^6. Thorax clothed with hair and hair-like scales ..... PARATRACHEA, p. 216.

f^5. Prothorax with spreading crest, metathorax with divided crest ..... POLYPHÆNIS, p. 667.

g^5. Prothorax with long oblique flattened crest.

a^6. Metathorax with divided crest ..... PAPAIPEMA, p. .

b^6. Metathorax with spreading crest ..... OGDOCONTA, p. .

h^5. Pro- and metathorax with spreading crests.

a^6. Thorax clothed chiefly with scales.

a^7. Fore wing with slight scale-tooth at tornus.

a^8. Abdomen with long forked crest on 2nd segment ..... ARGYROSTROTIS, p. 517.

b^8. Abdomen without forked crest on 2nd segment.

a^9. Fore wing with the termen more or less angled at vein 4, then oblique ..... ERIOPUS, p. 531.

b^9. Fore wing with the termen angled at vein 3, then dentate ..... COSMODES, p. .

c^9. Fore wing with the termen evenly curved, dentate ..... DATA, p. 526.

b^7. Fore wing without scale-tooth at tornus.

a^8. Palpi with the 3rd joint porrect.

a^9. Palpi with the 2nd joint reaching vertex of head, the 3rd long ..... ANCARA, p. 249.

b^9. Palpi with the 2nd joint reaching about middle of frons, the 3rd short.

a^{10}. Abdomen with large dorsal crest on 3rd segment ..... TELESILLA, p. 587.

b^{10}. Abdomen with the dorsal crests slight..... ANDROPOLIA, p. .

b^8. Palpi with the 3rd joint upturned.

a^9. Palpi with the 3rd joint long and dilated at extremity..... CROPIA, p. 260.

b^9. Palpi with the 3rd joint very long, not dilated, in male tufted with long hair on inner side and recurved over head..... CORYTHURUS, p. 360.

c^9. Palpi with the 3rd joint shorter and not dilated.

a^{10}. Fore wing with the cilia strongly dentate towards tornus ..... PERIGEODES, p. 287.

b^{10}. Fore wing with the cilia slightly crenulate.

a^{11}. Palpi with the 2nd joint reaching vertex of head.

a^{12}. Abdomen with very large crests on 3rd and 4th segments; build slender ..... CHYTONIX, p. 600.

b^{12}. Abdomen with the crests on medial segments equal; build stout.

a^{13}. Thorax and fore wing roughly scaled ..... HETEROCHROMA, p. 271.

b^{13}. Thorax and fore wing smoothly scaled ..... PERIGEA, p. 292.

b^{11}. Palpi with the 2nd joint reaching about middle of frons.
a^{12}. Abdomen with large crest on 3rd segment; build stout ... Euplexia, p. 219.
b^{12}. Abdomen with large crest on 4th segment; build slender... Microplexia, p. 354.
c^{12}. Abdomen with the crests on medial segments equal.
a^{13}. Fore wing with the apex rectangular and somewhat acute ..... Gortyna, p. .
b^{13}. Fore wing with the apex rounded ..... Oligia, p. 361.
b^{6}. Thorax clothed with hair and hair-like scales.
a^{7}. Prothorax with the crest long, mesothorax with small paired crests; abdomen with very large double crest at base ..... Acronicodes, p. .
b^{7}. Abdomen without large double crest at base.
a^{8}. Tegulæ produced to a slight dorsal ridge ..... Apamea, p. .
b^{8}. Tegulæ not produced to a dorsal ridge.
a^{9}. Thorax quadrately scaled ..... Lithomœa, p. .
b^{9}. Thorax not quadrately scaled.
a^{10}. Thorax clothed with long rough hair and hair-like scales .... Daseochæta, p. .
b^{10}. Thorax smoothly clothed with hair and hair-like scales..... Eremobia, p. 409.
c^{6}. Thorax clothed with hair only ..... Trichoplexia, p. 482.
i^{5}. Prothorax without distinct crest.
a^{6}. Thorax clothed chiefly with scales.
a^{7}. Palpi with the 2nd joint reaching vertex of head, the 3rd long.
a^{8}. Palpi with the 3rd joint porrect ... Pseuderastria, p. 614.
b^{8}. Palpi with the 3rd joint upturned... Bryophila, p. 618.
b^{7}. Palpi with the 2nd joint reaching about middle of frons, the 3rd short.
a^{8}. Abdomen with very large crest on 4th segment.
a^{9}. Metathorax with very large crest of long spatulate scales ..... Harrisimemna, p. 648.
b^{9}. Metathorax with moderate crest ... Cerma, p. 651.
b^{8}. Abdomen with the crests small.
a^{9}. Fore wing with the termen oblique towards tornus ..... Iambia, p. 654.
b^{9}. Fore wing with the termen evenly curved.
a^{10}. Fore wing long and narrow.
a^{11}. Fore wing with the termen erect ..... Calogramma, p. .
b^{11}. Fore wing with the termen obliquely curved ..... Prodenia, p. .
b^{10}. Fore wing short and broad ..... Craniophora, p. .
b^{6}. Thorax clothed with hair and hair-like scales.
a^{7}. Mesothorax with paired crests, patagia curled upwards at extremity ..... Canna, p. .
b^{7}. Mesothorax without crests, patagia not curled upwards at extremity ... Conservula, p. 499.

*j*5. Thorax without crests.
*a*6. Thorax clothed chiefly with scales.
*a*7. Palpi smoothly scaled and flattened against frons; fore wing narrow with the margins subparallel..... CLETHRORASA, p. .
*b*7. Palpi not flattened against frons and with a tuft of scales at extremity of 2nd joint; fore wing triangular ... NEOPHÆNIS, p. 681.
*b*6. Thorax clothed with hair and hair-like scales ..... FAGITANA, p. 592.
*b*4. Abdomen with dorsal crest at base only.
*a*5. Pro- and metathorax with divided crests..... CALPIFORMIS, p. 504.
*b*5. Prothorax with sharp triangular crest, metathorax with divided crest ..... MACRONOCTUA, p. 431.
*c*5. Prothorax with sharp triangular crest, metathorax with spreading crest ..... HYDRŒCIA, p. .
*d*5. Prothorax with ridge-like crest, metathorax with spreading crest ..... ANDROLYMNIA, p. .
*e*5. Thorax with slight dorsal ridge-like crest ..... PYRRHIA, p. .
*f*5. Pro- and metathorax with spreading crests.
*a*6. Thorax clothed chiefly with scales.
*a*7. Pro- and metathorax with the crests formed of very long spatulate scales OPSYRA, p. .
*b*7. Prothorax with long flattened crest projecting backwards.
*a*8. Fore wing with the termen excised below apex and excurved at middle. GERODA, p.
*b*8. Fore wing with the termen evenly curved..... MACAPTA, p. .
*c*7. Prothorax with short spreading crest.
*a*8. Mesothorax with slight paired crests. CRAMBODES, p. .
*b*8. Mesothorax without crests.
*a*9. Palpi with the 2nd joint reaching vertex of head.
*a*10. Build slender.
*a*11. Hind wing with vein 5 from middle of discocellulars.
*a*12. Fore wing with the termen excised from apex to middle. GONODES, p. .
*b*12. Fore wing with the termen evenly curved.
*a*13. Fore wing with the apex somewhat produced and acute ..... PLATYSENTA, p. .
*b*13. Fore wing with the apex rounded... ..... MONODES, p. .
*b*11. Hind wing with vein 5 from below middle of discocellulars. HADJINA, p. .
*b*10. Build stout..... MONOPTYA, p. 432.
*b*9. Palpi with the 2nd joint reaching about middle of frons.
*a*10. Thorax roughly scaled ..... HYPOPLEXIA, p. 426.
*b*10. Thorax smoothly scaled.
*a*11. Palpi with the 3rd joint porrect.
*a*12. Tegulæ produced to a slight dorsal ridge and hood..... CATABENA, p. .
*b*12. Tegulæ normal ..... NAMANGANA, p. .

b^{11}. Palpi with the 3rd joint upturned.
a^{12}. Fore wing with tufts of raised scales on the stigmata ..... PHÆOPYRA, p. 19.
b^{12}. Fore wing without tufts of raised scales on the stigmata. EUROMŒA, p. 425.
b^{6}. Thorax clothed with hair and hair-like scales.
a^{7}. Palpi with the 3rd joint long and porrect ..... RHYNCHOPLEXIA, p. 433.
b^{7}. Palpi with the 3rd joint short.
a^{8}. Palpi with the 2nd joint reaching to about vertex of head, build slender. TÆNIOSEA, p. 430.
b^{8}. Palpi with the second joint reaching to about middle of frons.
a^{9}. Fore wing with the apex produced and acute ..... CHIRIPHA, p. .
b^{9}. Fore wing with the apex rounded.
a^{10}. Fore wing with the termen oblique towards tornus ..... HERÆMA, p. 429.
b^{10}. Fore wing with the termen not oblique towards tornus .. .. SIDEMIA, p. 435.
c^{6}. Thorax clothed with hair only ..... LASIPLEXIA, p. 483.
g^{5}. Prothorax without crest, metathorax with spreading crest.
a^{6}. Thorax clothed almost entirely with scales.
a^{7}. Palpi with the 2nd joint reaching vertex of head ..... AUCHA, p. 661.
b^{7}. Palpi with the 2nd joint reaching about middle of frons.
a^{8}. Fore tibia broadly fringed with hair; fore wing rather broad ..... SPODOPTERA, p. .
b^{8}. Fore tibia slightly fringed with hair; fore wing long and narrow ..... LAPHYGMA, p. .
b^{6}. Thorax clothed with hair and hair-like scales ..... COBALIODES, p. 505.
h^{5}. Thorax without crests.
a^{6}. Palpi with the 2nd joint reaching vertex of head.
a^{7}. Hind wing with vein 5 from middle of discocellulars.
a^{8}. Palpi with the 3rd joint long ..... POLIONYCTA, p. .
b^{8}. Palpi with the 3rd joint short ..... GALGULA, p. .
b^{7}. Hind wing with vein 5 from below middle of discocellulars.
a^{8}. Palpi with the 2nd joint flattened against frons ..... CHASMINA, p. .
b^{8}. Palpi with the 2nd joint cylindrical. BAGISARA, p. .
b^{6}. Palpi with the 2nd joint not reaching above middle of frons, the 3rd short.
a^{7}. Antennæ laminate and almost simple.
a^{8}. Fore wing with the inner margin somewhat excised towards tornus... EULYMNIA, p. .
b^{8}. Fore wing with the inner margin not excised towards tornus ..... ACRONYCTA, p. .
b^{7}. Antennæ ciliated.
a^{8}. Thorax clothed chiefly with scales . AGRIOPODES, p. .
b^{8}. Thorax clothed with hair only ..... EUTERPIA, p. .
c^{4}. Abdomen without dorsal crests.
a^{5}. Thorax with dorsal ridge-like crest; frons with projecting corneous plate below it..... ECCLETA, p. 685.

b^4. Prothorax with triangular crest; metathorax with double ridge-like crest.
a^6. Fore wing with the termen strongly excurved at middle ..... BRACHYXANTHIA, p. .
b^6. Fore wing with the termen evenly curved..... ..... LOPHOCALAMA, p. .
c^5. Prothorax with triangular crest, metathorax with spreading crest ... . IPIMORPHA, p. .
d^5. Prothorax with spreading crest, metathorax with divided crest ..... THALPOPHILA, p. 679.
e^5. Pro- and metathorax with spreading crests.
a^6. Thorax clothed chiefly with scales.
a^7. Fore wing long and narrow.
a^8. Palpi with the 2nd joint reaching vertex of head..... ARÆA, p. 688.
b^8. Palpi with the 2nd joint not reaching middle of frons ..... SYRRUSIS, p. 503.
b^7. Fore wing broad.
a^8. Palpi with the 2nd joint reaching vertex of head.
a^9. Palpi with the 3rd joint long.
a^{10}. Hind wing with vein 5 from middle of discocellulars ..... GRACILIPALPUS, p. 42.
b^{10}. Hind wing with vein 5 from below middle of discocellulars. SELAMBINA, p. 516.
b^9. Palpi with the 3rd joint moderate.
a^{10}. Palpi with the 3rd joint porrect.
a^{11}. Fore wing with the apex produced ..... CALLOGONIA, p. 589.
b^{11}. Fore wing with apex rounded... CARBONA, p. .
b^{10}. Palpi with the 3rd joint upturned; fore wing with the apex somewhat produced and acute . STRIGIPHLEBIA, p. .
b^8. Palpi with the 2nd joint reaching about middle of frons ..... AMPHIDRINA, p. .
b^6. Thorax clothed with hair and hair-like scales ....
a^7. Palpi with 2nd joint reaching vertex of head; hind wing with the termen excised at discal fold ..... STYGIOSTOLA, p. 44.
b^7. Palpi with the 2nd joint reaching middle of frons; hind wing with the termen evenly curved.
a^8. Palpi with the 3rd joint porrect; fore wing narrow .... LUPERINA, p. 466.
b^8. Palpi with the 3rd joint upturned; fore wing broader..... MERISTIS, p. .
f^5. Prothorax with spreading crest; metathorax without crest.
a^6. Fore wing narrow, the margins subparallel.
a^7. Palpi with the 2nd joint reaching vertex of head.
a^8. Hind wing with veins 3, 4 stalked. HYPOSTILBIA, p. .
b^8. Hind wing with veins 3, 4 from cell. ATHETIS, p. .
b^7. Palpi slender, the 2nd joint reaching middle of frons ..... ARGYROSPILA, p. .
b^6. Fore wing broad, triangular.
a^7. Thorax clothed with hair and scales mixed ..... RAMPSODES, p. .

b^7. Thorax clothed with hair and hair-like scales..... ARENOSTOLA, p. .
g^5. Prothorax without crest; metathorax with small paired crests ..... ARIATHISA, p. .
h^5. Prothorax without crest; metathorax with spreading crest.
a^6. Thorax clothed with scales and hair mixed.
a^7. Palpi with the 2nd joint reaching vertex of head.
a^8. Palpi with the 3rd joint porrect ... ATIMÆA, p. .
b^8. Palpi with the 3rd joint upturned... CALYMNIODES, p. .
b^7. Palpi with the 2nd joint reaching about middle of frons..... PSEUDINA, p. .
c^7. Palpi short, porrect.
a^8. Tegulæ produced behind into a slight hood ..... EPIMECIA, p. .
b^8. Tegulæ not produced into a hood.
a^9. Fore wing long and narrow.
a^{10}. Fore wing with the apex produced, the termen oblique ..... FERGANA, p. .
b^{10}. Fore wing with the apex not produced, the termen less oblique. STILBIA, p. .
b^9. Fore wing shorter and broader ... PRÆSTILBIA, p. .
b^6. Thorax clothed with hair only ..... MYDRODOXA, p. .
b^5. Thorax without crests.
a^6. Thorax clothed chiefly with scales.
a^7. Abdomen dorsally flattened..... PERINÆNIA, p. 21.
b^7. Abdomen not dorsally flattened.
a^8. Fore wing long and narrow.
a^9. Build stout ..... AGROTISIA, p. 692.
b^9. Build slender..... PROXENUS, p. .
b^8. Fore wing short and broad.
a^9. Build stout.
a^{10}. Palpi with the 2nd joint reaching vertex of head, slender,
a^{11}. Palpi flattened against frons ... CALLYNA, p. .
b^{11}. Palpi cylindrical ..... ELYDNA, p. .
b^{10}. Palpi with the 2nd joint reaching middle of frons, broadly scaled.
a^{11}. Hind wing with the termen excised at discal fold ..... PHUPHENA, p. 593.
b^{11}. Hind wing with the termen evenly curved ..... NICARA, p. .
b^9. Build slender.
a^{10}. Palpi upturned, the 2nd joint reaching vertex of head.
a^{11}. Palpi with the 3rd joint long... MELAGRAMMA, p. 691.
b^{11}. Palpi with the 3rd joint moderate ..... MICROTHETIS, p. .
b^{10}. Palpi oblique, the 2nd joint reaching middle of frons..... AMPHILITA, p. .
b^6. Thorax clothed with hair and hair-like scales.
a^7. Abdomen dorsally flattened.
a^8. Palpi with the 2nd joint fringed with hair in front.
a^9. Hind wing with vein 5 from middle of discocellulars..... PERIPYRA, p. 25.
b^9. Hind wing with vein 5 from below middle of discocellulars..... SYNTOMOPUS, p. 22.

b^8. Palpi smoothly scaled; hind wing with vein 5 from middle of discocellulars ..... AMPHIPYRA, p. 26.
b^7. Abdomen not dorsally flattened.
a^8. Head and thorax clothed with rough hair and spatulate scales ..... OROPLEXIA, p. 510.
b^8. Head and thorax smoothly clothed with hair and hair-like scales.
a^9. Frons with ridges of hair above and between antennæ..... MIMLEUCANIA, p. .
b^9. Frons without ridges of hair.
a^{10}. Fore wing with the apex somewhat produced and acute ..... CALYMNIA, p. .
b^{10}. Fore wing with the apex rounded. DICYCLA, p. .
c^6. Thorax clothed with hair only.
a^7. Eyes small, reniform.
a^8. Palpi extending about the length of head ..... EUTRICOPIS, p. .
b^8. Palpi extending to joint beyond frons ..... PANEMERIA, p. .
b^7. Eyes large, round.
a^8. Abdomen dorsally flattened ..... BITYLA, p. 41.
b^8. Abdomen not dorsally flattened.
a^9. Abdomen entirely clothed with rough hair ..... DAPHÆNURA, p. .
b^9. Abdomen with rough hair at base only.
a^{10}. Build stout.
a^{11}. Palpi upturned, the 2nd joint moderately fringed with hair in front ..... ENARGIA, p. .
b^{11}. Palpi porrect, the 2nd joint fringed with long hair below.
a^{12}. Fore wing narrow ..... CALAMIA, p. .
b^{12}. Fore wing broad..... ORIA, p. .
b^{10}. Build slender ..... HYPOCŒNA, p. .
c^9. Abdomen smoothly scaled.
a^{10}. Palpi upturned ..... OMMATOSTOLA, p. .
b^{10}. Palpi porrect ..... HYPOCALAMIA, p. .

Genus **PHÆOPYRA**, nov.

Type, *P. novaguinensis.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately scaled, the 3rd moderate; frons smooth; eyes large, rounded; antennæ of male minutely serrate and fasciculate; head and thorax smoothly clothed with scales, the prothorax with spreading crest, the metathorax with slight crest; tibiæ moderately fringed with hair; abdomen with some rough hair at base and dorsal crest at base only. Fore wing with the apex rounded, the termen slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell; the stigmata with slight tufts of raised scales on their edges. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Head, tegulæ, pectus, and legs rufous ..... *chloeropis.*
B. Head, tegulæ, pectus, and legs grey-white mixed with brown..... *novaguinensis.*

*2748. Phæopyra chloeropis. (Plate CVIII. fig. 9.)

Euplexia chloëropis, Turner, Tr. R. Soc. S. Austr. xxviii. p. 213 (1904).

♂. Head and tegulæ pale rufous, the latter greyish at base; 2nd joint of palpi blackish at sides; frons with black lateral bars; thorax brown mixed with grey and some black scales; pectus and legs rufous; abdomen fuscous, the anal tuft rufous, the ventral surface rufous at base followed by bands on the next two segments. Fore wing red-brown irrorated with grey and dark brown; the base and inner area suffused with grey; a curved blackish subbasal line from costa to submedian fold, double at costa; an indistinct minutely waved antemedial line, double at costa and obsolete on inner area; orbicular and reniform small, the former round, grey defined by black, and with black centre, the latter indistinctly defined by black and suffused with brown; postmedial line indistinct and slightly defined by grey on outer side, minutely dentate, bent outwards below costa and incurved below vein 4; some grey points on costa towards apex; subterminal line indistinct, greyish and fuscous, slightly dentate, angled outwards at vein 7 and excurved at middle, a grey patch beyond it at apex; a terminal series of small black lunules; cilia grey and brown. Hind wing fuscous, brownish towards base; the cilia grey; the underside ochreous grey, with broad fuscous terminal band except at tornus; a slight discoidal point and sinuous postmedial line.

Hab. Queensland, Biggenden, type † ♂ in Coll. Turner. *Exp.* 40 millim.

2749. Phæopyra novaguinensis.

Protagrotis novaguinensis, Beth.-Baker, Nov. Zool. xiii. p. 192 (1906).

Head and thorax pale grey mixed with reddish brown; palpi blackish at sides, except at extremities of 2nd and 3rd joints;

Fig. 2.—*Phæopyra novaguinensis*, ♂. ½.

frons with black bars at middle and above; vertex of head blackish; patagia with oblique red-brown stripes at base; tarsi black with pale rings; abdomen grey suffused with reddish brown, the ventral surface whitish suffused with rufous, the extremity blackish. Fore wing grey suffused with reddish brown, especially on costal half from before middle to near apex; a black point at

base; subbasal line slight, blackish, waved from costa to submedian fold, with some red-brown suffusion before it; antemedial line double, blackish, very indistinct and much interrupted, oblique, waved: claviform represented by a small tuft of raised blackish scales; orbicular and reniform with brown centres and whitish annulus slightly defined by raised blackish scales, the former round, the latter with small white spot in lower extremity; faint traces of a waved medial line; postmedial line blackish, indistinct and interrupted, bent outwards below costa, then minutely waved, incurved below vein 4, some whitish points beyond it on costa; an oblique whitish apical patch, with the indistinct, diffused, waved, whitish subterminal line defined on inner side by slight blackish marks from it to inner margin; a terminal series of slight black lunules; cilia whitish, with diffused red-brown lines at middle and tips. Hind wing fuscous brown, the inner margin tinged with pale rufous; cilia white mixed with red-brown from apex to vein 2; the underside white, the costal area tinged with rufous, the terminal area blackish from apex to submedian fold.

Hab. Br. New Guinea, Mt. Kebea (*Pratt*), 1 ♂, Ekeikei (*Pratt*), 5 ♀. *Exp.* 42–44 millim. Type † in Coll. Bethune-Baker.

Genus PERINÆNIA.

Type.

Perinænia, Butl. A. M. N. H. (5) i. p. 289 (1878) ..... *lignosa*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to vertex of head and broadly rounded with scales in front, the 3rd long and broadly scaled in front; frons smooth, with large tuft of scales; eyes large, rounded; antennæ of male ciliated; thorax clothed almost entirely with scales and without crests; tibiæ thickly scaled; abdomen dorsally flattened, with some rough hairs at base but without crests. Fore wing with the costa and inner margin subparallel, the apex rectangular, the termen evenly curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base only.

2750. Perinænia lignosa.

Perinænia lignosa, Butl. A. M. N. H. (5) i. p. 289 (1878); id. Ill. Het. B. M. ii. p. 37, pl. 32. f. 7.

Head and thorax olive-brown mixed with blackish; abdomen greyish brown, the ventral surface pale olive irrorated with fuscous. Fore wing pale olive mixed with brown and sparsely irrorated with black; the base with some blackish suffusion; a slight dark streak in submedian fold near base usually present; antemedial line dark, more or less distinct, waved; orbicular represented by a white point, the reniform by a whitish spot usually placed on a more or less prominent black streak in discal fold extending to postmedial line, which is dark, minutely waved, excurved from costa to vein 4 and slightly incurved at submedian fold, often with whitish point on it

at discal fold, and usually with dark streaks beyond it on the veins of costal half; faint traces of a curved subterminal line; a terminal series of black and ochreous points. Hind wing olive ochreous, more or less completely suffused with dark olive-brown, the

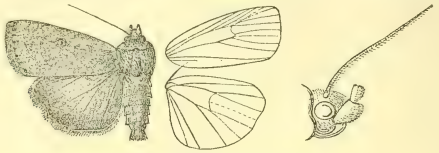


Fig. 3.—*Perinœnia lignosa*, ♂. ½.

terminal area fuscous black; cilia olive ochreous mixed with brown; the underside brownish ochreous, the costal area irrorated with brown, the terminal area tinged with fuscous, a fuscous discoidal lunule and strong curved postmedial line.

Hab. Japan, Tokio (*Maries*), 1 ♂, Yokohama (*Jonas*, *Pryer*, *Manley*), 4 ♂, 6 ♀, type; C. China, Kiukiang (*Pryer*), 1 ♀. *Exp.* 40–54 millim.

Genus **SYNTOMOPUS**.

Type.

Syntomopus, Guen. Ann. Soc. Ent. Fr. vi. p. 223 (1837) ..... *cinnamomea.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and fringed with hair in front, the 3rd short; frons smooth; eyes large, round; antennæ of male minutely ciliated; thorax clothed with hair and hair-like scales and without crests; tibiæ fringed with long hair; abdomen dorsally flattened, clothed with rough hair at base and with lateral fringes of hair towards extremity, but without crests. Fore wing with the apex rounded, the termen evenly curved, crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Hind wing fiery red.
  a. Hind wing with the cilia pure white ..... *albicilia.*
  b. Hind wing with the cilia yellowish, with a red line through them ..... *cinnamomea.*
B. Hind wing pale red-brown ..... *effusa.*

2751. **Syntomopus albicilia.** (Plate CVIII. fig. 10.)

Amphipyra albicilia, Hmpsn. Moths Ind. ii. p. 192 (1894).

♀. Head and thorax bright rufous mixed with ochreous grey; pectus and legs grey mixed with red-brown; abdomen red-brown mixed with greyish, deep red-brown at extremity, the anal tuft ochreous and rufous, the ventral surface whitish irrorated with rufous, red-brown at extremity. Fore wing grey suffused in parts

with red-brown, and with slight dark brown streaks on the veins; the basal half of submedian fold with fine dark brown streak and the terminal half with diffused pale rufous streak, the discal fold with diffused pale rufous streak from middle of cell to subterminal line; subbasal line represented by indistinct double oblique red-brown striæ from costa; antemedial line indistinct, double, dentate, angled outwards below costa in submedian fold and above inner margin and inwards on vein 1, an oblique dark brown streak from it just below subcostal nervure to lower angle of cell; orbicular absent; reniform represented by two small whitish spots; a dark brown streak above vein 4 extending to termen and a streak above vein 3 to postmedial line; an indistinct curved medial shade; postmedial line double, indistinct from below costa to vein 3, bent outwards below costa, then waved, oblique to vein 4, then inwardly oblique, some pale points beyond it on costa; subterminal line represented by a series of pinkish-white dentate marks, defined on inner side by red-brown forming dentate marks from costa to vein 3, a dark streak beyond it above vein 3; cilia with series of red-brown lunules at base and greyish and rufous tips. Hind wing bright cupreous red, the terminal area rather deeper red; cilia white; underside of both wings cupreous red with slight whitish discoidal lunules, the costal and terminal areas white defined inwardly by deep red.

Hab. Punjab, Murree (*Harford*), 1 ♀ type. *Exp.* 58 millim.

2752. Syntomopus cinnamomea.

Noctua cinnamomea, Kleem. Beitr. Ins. p. 157, pl. 18. ff. 1–6 (1761); Goeze, Beitr. iii. 3, p. 205 (1781); Staud. Cat. Lep. pal. p. 200.
Noctua conica, Esp. Schmett. iv. pl. 171. ff. 4, 6 (1791); Godart, Lép. Fr. v. p. 139, pl. 56. f. 5.
Noctua perfusa, Hübn. Eur. Schmett., Noct. f. 37 (1802).

Head and thorax bright rufous mixed with ochreous white; palpi darker red, the tip of 3rd joint white; frons deep red at sides, edged

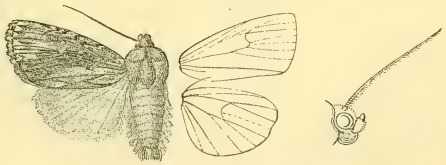


Fig. 4.—*Syntomopus cinnamomea*, ♂. ½.

by white in front; abdomen rufous mixed with whitish. Fore wing bright rufous mixed with ochreous and some white scales, the veins with slight dark streaks; subbasal line represented by an oblique dark striga from costa defined by ochreous on outer side; antemedial line indistinct, rufous slightly defined by ochreous on inner side,

angled outwards below costa, then strongly dentate; orbicular represented by a slight whitish mark at its extremity, the reniform by slight whitish marks at the angles of cell; a pale rufous streak in discal fold from orbicular to postmedial line; postmedial line indistinct, rufous slightly defined by ochreous on outer side, bent outwards below costa, excurved to vein 4, then oblique and excurved at vein 1, some whitish points beyond it on costa; subterminal line very indistinct, ochreous defined on inner side by deep rufous interrupted by ochreous above veins 6 and 3, slightly excurved below costa and at middle; cilia rufous intersected with ochreous. Hind wing bright cupreous red; cilia pale yellow, with red line through them except towards tornus. Underside of fore wing pale red, the costal and terminal areas whitish irrorated with red; hind wing with the costal half whitish irrorated with red, the inner half red, a slight red discoidal spot and curved postmedial line rather near termen.

Hab. France, Sand Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Styria; Switzerland; N. Italy; ? Corsica; Asia Minor, Pontus. *Exp.* 44–48 millim.

Larva. Kirby, Eur. Butt. & Moths, p. 192; Hffm. Raup. p. 111, pl. 30. f. 17.

Yellowish green with whitish dorsal line; an oblique yellow streak from dorsum on 12th somite to the yellow lateral line on 11th somite. Food-plants: Elm and *Euonymus*. 6–7.

2753. Syntomopus effusa.

Amphipyra effusa, Boisd. Ind. Meth. p. 68 (1829); Geyer, Eur. Schmett., Noct. ff. 820, 821; Frr. Neue Beitr. ii. pl. 148. f. 3; Dup. Lép. Fr., Suppl. iii. p. 201, pl. 19. f. 2; Mill. Icones, i. p. 136, pl. 5. ff. 5, 8; Staud. Cat. Lep. pal. p. 200.

Amphipyra sciaphila, Staud. Hor. Ent. Soc. Ross. vii. p. 129, pl. 1. f. 12 (1870).

Head and thorax ochreous white tinged with rufous and mixed with dark brown; palpi with blackish mark at side of 2nd joint; tegulæ with diffused dark medial band; patagia with dark marks at base and middle; tibiæ with blackish marks; tarsi blackish ringed with ochreous; abdomen ochreous tinged with rufous. Fore wing ochreous irrorated with dark purple-brown; subbasal line represented by double purple-brown striæ from costa and spot in cell; antemedial line indistinctly double, with more prominent spots on costa, oblique, sinuous; claviform represented by a dark point at its extremity; orbicular and reniform slightly defined by purple-brown and with quadrate dark patch between them, the former elongate-elliptical, the latter with its centre slightly defined by purple-brown, more prominently below; a purple-brown medial shade from costa to the dark patch in cell and indistinct sinuous line from cell to inner margin; postmedial line double, indistinct except towards costa, slightly bent outwards below costa, then dentate and produced to dark points on the veins, with dark mark on its inner edge at discal fold connecting it with the reniform.

oblique below vein 4 and strongly angled outwards on vein 1, some pale points beyond it on costa with slight dark streaks between them; subterminal line very indistinct, pale, defined on inner side by a dark patch at costa, slight streaks above veins 7, 5, 4, and a dentate dark mark in submedian fold; a terminal series of small black spots; cilia ochreous mixed with rufous. Hind wing pale ochreous slightly tinged with red-brown, a very faint curved post-medial line and slight terminal shade from apex to submedian fold.

Ab. 1. *sciaphila*. Much paler, with the markings obsolescent.

Hab. France, Leech Coll.; Germany, Zeller and Leech Colls.; Spain, Catalonia; Corsica; Italy, Frey Coll.; Sicily; Dalmatia, Leech Coll.; Greece; Algeria; Syria. *Exp.* 44–54 millim.

Larva. Kirby, Eur. Butt. & Moths, p. 192; Hffm. Raup. p. 111, pl. 30. f. 15.

Green with red and white dorsal and lateral lines. Food-plants: Low-growing herbs—*Cytisus*, *Cistus*, *Lavatera*, &c. 7.

Genus **PERIPYRA**, nov.

Type, *P. sanguinipuncta*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and rather broadly fringed with hair in front, the 3rd moderate; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed with hair and hair-like scales and without crests; tibiæ fringed with long hair, the fore femora and tibiæ of male with immense tufts of hair; abdomen dorsally flattened, with lateral fringes of hair but without crests. Fore wing with the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

2754. Peripyra sanguinipuncta.

Amphipyra sanguinipuncta, Guen. Noct. ii. p. 412, pl. 18. f. 2 (1852).
Mamestra trilineata, Wlk. xxxii. 669 (1865).

Head and thorax fulvous; palpi with black patch at side of 2nd joint and whitish tips; upper part of frons and vertex of head

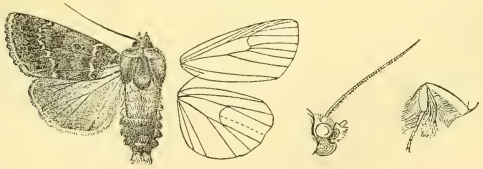


Fig. 5.—*Peripyra sanguinipuncta*, ♂. ½.

black; tegulæ with black patches; mesothorax with paired black patches, the metathorax with single patch; pectus and legs greyish ochreous, the tarsi ochreous white, the tufts on fore legs of male

blackish; abdomen reddish ochreous suffused with black except at base and extremity. Fore wing purplish grey slightly irrorated with whitish, the base of inner margin yellowish white; subbasal line represented by small black spots below costa and cell, with fiery-red points before and beyond them; antemedial line black defined by whitish on inner side, with slight fiery-red and black streak before it in cell and red point on it in submedian fold, oblique and slightly waved; claviform represented by a black patch; orbicular and reniform black incompletely defined by fiery red, the former round, the latter lunulate; slight medial dark marks in submedian fold and on vein 1; postmedial line formed of small black lunules defined by whitish on outer side, slightly excurved from costa to vein 4, then oblique; subterminal line whitish, with series of orange-red spots on it and defined on inner side by wedge-shaped black marks, slightly excurved below vein 7 and at middle; a terminal series of small black lunules defined on inner side by orange-red lunules; cilia with fine whitish line at base. Hind wing reddish brown; cilia ochreous at base, whitish at tips and brownish at apex; the underside whitish tinged with ochreous, the terminal area broadly black-brown from costa to vein 2, a small black discoidal lunule and indistinct curved postmedial line.

Hab. Victoria, Gisborne (*Lyell*), 1 ♂, 1 ♀; Tasmania (*Milligan, Smith, Green*), 5 ♂, 3 ♀, type *trilineata*. *Exp.* 44–46 millim.

Larva. Lidgett, 'Transformation of Australian Lepidoptera,' p. 15, Gisborne, 1893.

Dull yellowish dorsally, laterally tawny brown; dorsal and subdorsal stripes, the former ending at 11th somite, the latter at 10th, the area between them dull yellow, with fine, waved, interrupted, dark lines, broader on thoracic somites; lateral line white, enclosing the black spiracles on the three anal somites; prolegs fuscous, with a yellow dash on outer side; head very small, with ochreous A-shaped mark in front; a few short hairs. Food-plant, *Urtica*.

Cocoon slight, web-like, the dark red-brown pupa seen through it.

Genus **AMPHIPYRA**.

	Type.
Amphipyra, Ochs. Schmett. Eur. iv. p. 70 (1816), non descr.; Treit. Schmett. Eur. v. (i.) p. 276 (1825)	*tragopoginis.*
Pyrois, Hübn. Verz. p. 208 (1827)	*cinnamomea.*
Scotophila, Hübn. Verz. p. 208 (1827)	*livida.*
Pyrophila, Steph. Ill. Brit. Ent., Haust. ii. p. 164 (1829)	*tragopoginis.*
Philopyra, Guen. Ann. Soc. Ent. Fr. vii. p. 116 (1838)	*pyramidea.*
Pyrophila, Hubn. Tent. ined.	*pyramidea.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching vertex of head and smoothly scaled, the 3rd moderate; frons smooth; eyes large, round; antennæ simple; thorax smoothly clothed with hair and hair-like scales and without crests; tibiæ moderately fringed with hair; abdomen dorsally flattened, with some rough hair at base and lateral fringes of hair, but without crests. Fore wing with the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell.

Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Hind wing cupreous red.
  a. Fore wing with the ante- and postmedial lines present.
    a^1. Fore wing with strong dentate dark marks in the interspaces before subterminal line and streaks beyond it... *magna*.
    b^1. Fore wing with the dentate marks before subterminal line and streaks beyond it slight.
      a^2. Fore wing with the postmedial line erect from below costa to vein 6..... *pyramidea*.
      b^2. Fore wing with the postmedial line oblique from below costa to vein 6..... *pyramidoides*.
  b. Fore wing with the ante- and postmedial lines absent.
    a^1. Hind wing deep cupreous red; size large..... *cupreipennis*.
    b^1. Hind wing pale cupreous red; size moderate ..... *livida*.
B. Hind wing not cupreous red.
  a. Fore wing black.
    a^1. Fore wing without ante- and postmedial white bands... *atronitens*.
    b^1. Fore wing with ante- and postmedial white bands ..... *tripartita*.
  b. Fore wing with the ground-colour fuscous brown to whitish.
    a^1. Fore wing with the medial area suffused with black.
      a^2. Fore wing with the subterminal line excurved below vein 7 and at middle.
        a^3. Fore wing with the basal area suffused with black. *jancousci*.
        b^3. Fore wing with the basal area not suffused with black..... *erebina*.
      b^2. Fore wing with the subterminal line dentate ..... *perfluxa*.
    b^1. Fore wing with the medial area not suffused with black.
      a^2. Fore wing with the ante- and postmedial lines absent.
        a^3. Fore wing without whitish subterminal line.
          a^4. Fore wing without black points in middle of cell and on discocellulars ..... *tetra*.
          b^4. Fore wing with black points in middle of cell and on discocellulars..... *tragopoginis*.
        b^3. Fore wing with whitish subterminal line ..... *styx*.
      b^2. Fore wing with the ante- and postmedial lines present.
        a^3. Fore wing with the terminal area not whitish.
          a^4. Fore wing with the antemedial line single.
            a^5. Fore wing slightly irrorated with grey..... *schrenci*.
            b^5. Fore wing strongly irrorated with grey..... *subrigua*.
          b^4. Fore wing with the antemedial line double.
            a^5. Hind wing wholly suffused with brown ..... *micans*.
            b^5. Hind wing whitish, the terminal area suffused with brown ..... *molybdea*.
        b^3. Fore wing with the terminal area whitish.
          a^4. Fore wing with the orbicular and reniform indistinctly defined.
            a^5. Hind wing tinged with fulvous ..... *alpheraci*.
            b^5. Hind wing not tinged with fulvous ..... *glabella*.
          b^4. Fore wing with the orbicular and reniform defined by fine white lines..... *sergei*.

2755. Amphipyra magna.

Amphipyra magna, Wlk. xxxiii. 868 (1865); Hmpsn. Moths Ind. ii. p. 191.
Amphipyra chalcoptera, Feld. Reis. Nov. pl. 112. f. 18 (1874).

Head and thorax dark red-brown mixed with ochreous; palpi darker slightly irrorated with white; pectus and legs brown mixed

with greyish, the tarsi fuscous ringed with white; abdomen grey-brown with white segmental rings. Fore wing whitish mixed with red-brown and dark brown, the outer half of medial area dark purplish brown, the veins of terminal area streaked with dark brown; subbasal line double filled in with whitish, waved, from costa to submedian fold; antemedial line double filled in with whitish, strongly waved, erect; orbicular with whitish annulus defined by dark brown, rather elongate elliptical; reniform represented by a few pale scales on discocellulars; a very indistinct waved medial line bounding the dark area; postmedial line double filled in with whitish, bent outwards below costa, then dentate, erect to vein 4, then slightly incurved, some pale points beyond it on costa; subterminal line whitish, defined on inner side by wedge-shaped dark-brown marks and with dark streaks beyond it, dentate to vein 3, then incurved; a terminal series of slight dark lunules defined on inner side by whitish striæ; cilia red-brown mixed with whitish and with dark line through them. Hind wing cupreous red, the costal area pale red-brown; cilia tinged with red-brown towards apex; the underside pale cupreous red, the costal area irrorated with red-brown, a diffused postmedial line bent inwards to costa, dark to discal fold, then obsolescent, the terminal area irrorated with red-brown to vein 4.

Hab. Punjab, Kulu, Sultanpur (*G. Young*), 1 ♀, Thundiani (*Yerbury*), 5 ♀, Dharmsála (*Buckley, Horne, Hocking*), 3 ♂, 4 ♀ type. *Exp.* 64–72 millim.

2756. Amphipyra pyramidea.

Noctua pyramidea, Linn. Syst. Nat. ed. x. p. 518 (1758); Esp. Schmett. iv. pl. 171. ff. 1–3; Hübn. Eur. Schmett., Noct. f. 36; Godart, Lép. Fr. v. p. 136, pl. 56. f. 4; Donovan, Brit. Ins. vi. pl. 193; Steph. Ill. Brit. Ent., Haust. ii. p. 164; Staud. Cat. Lep. pal. p. 200.
Amphipyra monolitha, Guen. Noct. ii. p. 414 (1852); Hmpsn. Moths Ind. ii. p. 191.
Amphipyra surnia, Feld. Reis. Nov. pl. 112. f. 17 (1874).
Amphipyra obscura, Oberth. Ét. Ent. v. p. 85 (1889).
Amphipyra obliquilimbata, Græs. Berl. ent. Zeit. 1888, p. 352.

Head and thorax dark red-brown mixed with ochreous; tibiæ and tarsi black-brown ringed with ochreous white; abdomen grey-brown tinged with reddish at base, the sides black-brown with pale bars, the ventral surface pale red-brown. Fore wing dark purplish red-brown irrorated with ochreous white; subbasal line indistinct, double, waved, filled in with whitish at costa, ending at submedian fold; antemedial line double filled in with whitish, strongly dentate, bent inwards to costa; a diffused dark shade in and beyond cell; orbicular indicated by a very faint minute ochreous annulus; reniform absent; a diffused oblique dark medial shade; postmedial line double filled in with ochreous white, bent outwards below costa, then dentate and produced to whitish points on the veins, slightly incurved at discal fold and below vein 4, some pale points beyond it on costa; subterminal line formed of small yellowish-white spots

defined on inner side by somewhat dentate blackish marks from costa to vein 3, then an incurved diffused yellowish-white line, slightly excurved at vein 7, the interspaces beyond it with blackish streaks with series of yellowish-white points just before termen; cilia brown mixed with some ochreous white and with dark line through them. Hind wing cupreous red, the costal area yellowish to beyond middle, then pale red-brown; cilia cupreous red at base, yellowish at tips; the underside yellowish tinged with red, the costal area irrorated with brown, a brown discoidal spot and diffused curved postmedial line rather near termen.

Ab. 1. *monolitha*. Larger; fore wing without dark centre to orbicular.

Ab. 2. Head, thorax, and fore wing much redder, the last with the reniform represented by a whitish point, the black suffusion in and beyond cell only prominent and extending to subterminal line. —Murree.

Ab. 3. *obscura*. Fore wing with the dark fascia in cell extending to base and subterminal line, the inner margin with some dark suffusion; hind wing with the veins and inner and terminal areas broadly suffused with dark brown.

Hab. Britain, Leech Coll; France; Germany, Zeller and Leech Colls.; Austria, Zeller Coll.; Hungary; Switzerland, Frey Coll.; Spain; Italy; Greece; Balkan States; Scandinavia; Russia; Armenia; Asia Minor, Bithynia, Pontus, Amanus Mts., Eybiz, 1 ♂; Persia; W. Turkestan, Turcomania; E. Siberia, Ussuri; Japan, Hakodaté (*Fletcher*), 1 ♂, Oiwake (*Pryer*), 1 ♂, Tsuruga (*Leech*), 1 ♂, Tokio (*Maries*), 2 ♀, Yokohama (*Jonas, Lewis, Pryer*), 1 ♂, 3 ♀; Centr. China, Kiukiang (*Pryer, Pratt*), 2 ♀, Chang-yang (*Pratt*), 1 ♀; W. China, Omeishan, 1 ♀, Pu-tsu-fang, 1 ♂, 1 ♀, Ta-chien-lu (*Pratt*), 1 ♀; Kashmir, Goorais Valley (*Leech*), 1 ♀; Punjab, Murree (*Harford*), 3 ♂, 1 ♀, Dharmsála (*Hocking*), 2 ♂, 2 ♀; Sikhim; Assam, Sylhet (*Badgley*), 4 ♀. *Exp.* 50–70 millim.

Larva. Meyr. Brit. Lep. p. 114; Barrett, Lep. Brit. v. p. 251, pl. 218. f. 1. Green; dorsal line white; subdorsal line yellowish white, interrupted; spiracular line greenish white; dots yellowish white; head green; 12th somite with a large conical prominence directed obliquely backwards, the apex horny, red-brown. Food-plants: Oak, Birch, Elm, &c. 5–6.

2757. Amphipyra pyramidoides. (Plate CVIII. fig. 11.)

Amphipyra pyramidoides, Guen. Noct. ii. p. 413 (1852); Riley, Am. Ent. ii. p. 26, f. 23; Druce, Biol. Centr.-Am., Het. ii. p. 507; Smith, Cat. Noct. N. Am. p. 197.
Amphipyra inornata, Grote, Proc. Ent. Soc. Phil. iii. p. 86 (1864).
Amphipyra conspersa, Riley, 3rd Rept. Ins. Miss. p. 75 (1871).

Head and thorax dark purplish brown mixed with ochreous white; palpi with whitish streak in front; tarsi blackish ringed with white; abdomen grey-brown tinged with purplish towards extremity and with whitish segmental rings, the anal tuft and

ventral surface ochreous mixed with brown. Fore wing greyish suffused and irrorated with dark purplish brown, the outer half of medial area rather darker except towards costa; subbasal line represented by double dark striæ from costa and cell filled in with whitish; antemedial line double filled in with whitish, dentate, more strongly angled inwards on vein 1 and outwards above inner margin; orbicular small and rather elongate, with whitish annulus defined by black and some blackish before and beyond it; reniform faintly defined by blackish and with a few whitish scales representing the annulus; an indistinct waved medial shade, oblique from costa to median nervure; postmedial line double filled in with whitish, slightly bent outwards below costa, oblique and sinuous to vein 4, then erect and minutely waved, incurved at submedian fold, some pale points beyond it on costa; subterminal line indistinct, whitish, defined on inner side by black streaks below costa and at middle extending to near postmedial line, excurved below vein 7 and at middle, then incurved, with white streaks beyond it in the interspaces to the terminal series of small black spots; cilia reddish brown with a dark line through them. Hind wing cupreous red, the costal area suffused with brown; a slight brown line on termen from apex to vein 2; cilia red-brown with a slight pale line at base except towards tornus; the underside with the costal half whitish irrorated with brown, the inner half pale cupreous red, a black discoidal spot and diffused postmedial line bent inwards to costa, blackish to vein 4, then faint.

Ab. 1. *inornata*. Hind wing with the base, veins and terminal area to vein 2 suffused with brown, leaving the disk and tornal areas only reddish.—Canada.

Ab. 2. *conspersa*. Fore wing thickly irrorated with grey and the markings almost obsolete except at costa.

Hab. Canada (*Norman*), 1 ♂, Ottawa (*Saunders*), 2 ♂, 1 ♀, Br. Columbia; U.S.A., East of Rocky Mts. (*Packard*, *Burg*), 4 ♂, 3 ♀, New York, Evans Center (*Grote*), 1 ♂, Garrison (*Cockerell*), 1 ♀, Pennsylvania, 1 ♂, Colorado, California, 1 ♂; Mexico, Cofre de Perote (*Trujillo*), 1 ♂, 2 ♀, Godman-Salvin Coll. *Exp.* 50–58 millim.

Larva. Head green. Body robust, joint 12 enlarged dorsally; green, dotted with white; a straight white dorsal line; a broken white lateral line, forming an angle on joint 12; a narrow white stigmatal line.—H. G. D.

2758. **Amphipyra cupreipennis.** (Plate CVIII. fig. 12.)

Amphipyra cupreipennis, Moore, Lep. Atk. p. 155 (1882); Hmpsn. Moths Ind. ii. p. 192.

♀. Head, thorax, and abdomen fuscous brown; palpi in front and base of abdomen greyish. Fore wing uniform fuscous brown without markings; cilia with a slight whitish line at base. Hind wing cupreous red, the costal area reddish brown; cilia fuscous with a slight whitish line at base.

Hab. Sikhim (*Tetens*), 1 ♀. *Exp.* 74 millim.

2759. Amphipyra livida.

Noctua livida, Schiff. Wien. Verz. p. 85 (1776); Fabr. Mant. Ins. ii. p. 138 (1787); Hübn. Eur. Schmett., Noct. f. 38; Godart, Lép. Fr. v. p. 141, pl. 57. f. 1; Hmpsn. Moths Ind. ii. p. 191; Staud. Cat. Lep. pal. p. 200.
Noctua scotophila, Hübn. Beitr. I. 3, 4, Z. p. 34 (1788); Esp. Schmett. iv. pl. 170. f. 3 (1791).
Amphipyra corvina, Motsch. Bull. Mosc. xxxix. p. 194 (1866).

Head and thorax dark red-brown glossed with grey; abdomen dark red-brown. Fore wing uniform dark red-brown with a greyish gloss and very slight whitish irroration; without trace of markings. Hind wing white tinged with fiery red, rather deeper towards termen, the apical area dark greyish brown narrowing to a point at vein 2; cilia brown to vein 1 with a fine whitish line at base below vein 2, whitish tinged with red towards tornus. Underside of fore wing pale grey-brown, the inner area whitish to beyond middle; hind wing white faintly tinged with red, the costal area from near base and the terminal area to vein 1 dark brown.

Ab. 1. *corvina*. Head, thorax, and fore wing usually darker and more shot with purple; hind wing redder.—E. Siberia, Japan, Corea, China.

Ab. 2. Fore wing much greyer; hind wing paler.

Hab. France; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Corsica; Italy; Roumelia; Russia, Sarepta, Zeller Coll.; Armenia; Asia Minor, Pontus; W. Siberia, Altai; E. Siberia, Amurland, 1 ♂, Ussuri; Japan, Yezo, Hakodaté (*Andrewes*), 3 ♂, Kobé (*Lewis*), 1 ♂, Chiuzenji (*Lewis*), 1 ♂, Oiwake (*Pryer*), 1 ♂, Tokio (*Maries*), 1 ♀, Yokohama (*Jonas*), 3 ♂, 1 ♀; Corea, Gensan (*Leech*), 1 ♂; Centr. China, Shanghai (*J. J. Walker, Pryer*), 4 ♂, 2 ♀, Kiukiang (*Pratt*), 1 ♂, 1 ♀, Chang-yang (*Pratt*), 1 ♂, 1 ♀; W. China, Kwei Chow, 1 ♂; Assam (*Badgley*), 1 ♂. *Exp.* 40–50 millim.

Larva. Kirby, Eur. Butt. & Moths, p. 192; Hffm. Raup. p. 111, pl. 30. f. 13.

Yellowish green; dorsal line darker edged with pale green; subdorsal line yellowish, a yellow lateral stripe. Food-plants: Dandelion and other low-growing plants. 5–6.

2760. Amphipyra atronitens. (Plate CVIII. fig. 13.)

Glottula atronitens, Wlk. ix. 141 (1856).

♀. Head and thorax black; proboscis yellow; pectus mixed with greyish; abdomen black mixed with greyish especially at base. Fore wing glossy black irrorated with a few whitish scales; an indistinct minutely waved black postmedial line, erect from below costa to vein 2, then oblique. Hind wing whitish suffused with fuscous brown especially on terminal area; a slight brown terminal line; cilia pale brown with fine whitish line at base; the underside whitish tinged with brown, the costal and terminal areas broadly irrorated with dark brown.

Hab. 'Australia' (*H.M.S. Rattlesnake*), 1 ♀ type. *Exp.* 40 millim.

2761. Amphipyra tripartita.

Amphipyra tripartita, Butl. A. M. N. H. (5) i. p. 288 (1878); id. Ill. Het. B. M. ii. p. 36, pl. 32. f. 4.

Head and thorax glossy black-brown with a few whitish scales on tegulæ; palpi with fine white streak in front; frons edged with white; antennæ white at base in front; tibiæ and tarsi black ringed with white; abdomen dark grey-brown with a reddish tinge, the ventral surface whitish at base. Fore wing glossy black-brown; a white point at base below the cell; subbasal line represented by an oblique white striga from costa; an erect white antemedial band slightly bent inwards to costa and inner margin; stigmata absent; a white postmedial band, oblique from costa to vein 5, then erect to inner margin near tornus, with bright rufous beyond it except towards costa; subterminal line formed by silvery white scales from costa to vein 3, excurved between veins 7 and 5 and slightly angled outwards at veins 4, 3, an incurved white line from vein 3 to tornus, a series of faint black marks beyond it in the interspaces except towards apex and tornus; a series of silvery white striæ just before termen; cilia with a fine whitish line at base. Hind wing fuscous brown with a reddish tinge; cilia pale brown with a whitish line at base; underside of fore wing grey suffused with fuscous, the postmedial band greyish with white spot at costa; hind wing grey suffused with fuscous brown, the basal and inner areas paler, a slight dark discoidal spot, a diffused curved postmedial band diffused inwards on costa to near base and a terminal band.

Hab. Japan, Kiushiu, 1 ♂, 6 ♀, Yokohama (*Jonas*), 1 ♂, 1 ♀ type; Centr. China, Chang-yang (*Pratt*), 1 ♂. *Exp.* 52–60 millim.

2762. Amphipyra jancousci.

Amphipyra jankowskii, Oberth. Ét. Ent. x. p. 27, pl. 2. f. 8 (1884); Staud. Cat. Lep. pal. p. 200.

Head and thorax fuscous brown mixed with some grey; palpi with the 2nd joint whitish in front and with white rings at extremities of the joints: pectus grey tinged with brown, the tibiæ and tarsi blackish ringed with white; abdomen whitish suffused with brown, the anal tuft tinged with ochreous, the ventral surface whitish tinged with ochreous. Fore wing fuscous irrorated with whitish to postmedial line, then whitish tinged with brown and with fuscous patch on costa before the subterminal line, the base of inner margin whitish; subbasal line whitish, waved from costa to submedian fold; antemedial line blackish defined by whitish on inner side, erect, waved; orbicular a small white spot defined by blackish; reniform absent; postmedial line blackish defined by white on outer side, minutely dentate, oblique from costa to vein 4 and slightly incurved at discal fold, then erect and slightly incurved

at submedian fold, some white points beyond it on costa on the dark patch ; subterminal line indistinct, whitish, defined on inner side by slight wedge-shaped blackish marks at middle, excurved below vein 7 and at middle, then incurved; a terminal series of slight brown lunules defined by whitish striæ on inner side ; cilia brown with series of whitish points at base. Hind wing white tinged with reddish brown especially on terminal area ; cilia white tinged with rufous at base ; the underside white, the costal area tinged with rufous and the termen with brown from apex to vein 2, a dark discoidal spot and indistinct maculate postmedial line from costa to vein 2 bent inwards to costa.

Hab. E. Siberia, Amurland, 2 ♂, Ussuri ; Corea, Gensan (*Ito*), 1 ♀. *Exp.* 44–50 millim.

2763. Amphipyra erebina.

Amphipyra erebina, Butl. A. M. N. H. (5) i. p. 287 (1878); id. Ill. Het. B. M. iii. p. 23, pl. 46. f. 12 ; Staud. Cat. Lep. pal. p. 200.
Amphipyra perflua, Leech, Trans. Ent. Soc. 1900, p. 46, nec Fabr.

Head and thorax bright rufous mixed with dark brown ; tarsi black ringed with white ; abdomen grey-brown with a reddish tinge. Fore wing bright red-brown with some dark irroration, the outer half of medial area suffused with black-brown, the terminal area paler and irrorated with whitish ; subbasal line double, waved, from costa to submedian fold ; antemedial line double, strongly waved, erect ; orbicular small, round, with dark brown centre and slight whitish annulus ; reniform represented by a minute rufous mark at upper angle of cell ; traces of a sinuous medial line bounding the dark area, oblique from costa to lower angle of cell ; postmedial line black defined by ochreous white on outer side, slightly bent outwards below costa, oblique to vein 4 and slightly incurved at discal fold, then erect, minutely waved, some pale points beyond it on costa ; subterminal line whitish slightly defined by brown on inner side and with blackish patch before it on costa, slightly excurved below vein 7 and at middle, then incurved ; a terminal series of slight blackish lunules with whitish striæ before them ; cilia rufous mixed with some dark brown. Hind wing red-brown ; cilia whitish tinged with rufous and with slight brown line through them ; the underside grey tinged with red-brown and irrorated with dark brown, a large blackish discoidal spot, rather diffused sinuous postmedial line, and diffused terminal band.

Ab. 1. Fore wing with the orbicular and reniform absent.—Centr. China.

Hab. E. Siberia, Ussuri ; Japan, Yesso (*Mrs. White*, *Andrews*), 1 ♂, 1 ♀, Fushiki (*Leech*), 1 ♂, 1 ♀, Nagahama (*Leech*), 1 ♀, Chiuzenji (*Lewis*), 1 ♀, Tokio (*Maries*), 2 ♂, Yokohama (*Jonas*, *Pryer*), 2 ♀ type ; Corea, Gensan (*Leech*), 3 ♀ ; Centr. China, Chang-yang (*Pratt*), 2 ♂, 3 ♀. *Exp.* 46–52 millim.

2764. Amphipyra perflua.

Noctua perflua, Fabr. Mant. Ins. ii. p. 179 (1787); Hübn. Eur. Schmett., Noct. f. 35; Godart, Lép. Fr. v. p. 134, pl. 56. f. 3; Frr. Beitr. pl. 23; F. de Wald. Ent. i. p. 198, pl. 5. f. 3; Staud. Cat. Lep. pal. p. 200.
Noctua pyramidina, Esp. Schmett. iv. pl. 192. f. 2 (1796).
Noctua ulmea, Schrank, Faun. Boica, ii. p. 321 (1802).

Head and thorax dark red-brown mixed with ochreous; palpi whitish at tips; tarsi ringed with ochreous; abdomen pale golden brown. Fore wing fuscous brown with a purplish tinge and irrorated with ochreous to the postmedial line, the terminal area whitish tinged with reddish brown especially towards termen and the veins with dark streaks; a faint whitish subbasal line from costa to submedian fold, angled outwards below costa; antemedial line whitish, waved, erect; orbicular a minute faint round whitish annulus; reniform absent; traces of a dark medial shade; postmedial line double, brown filled in with white, slightly bent outwards below costa, then dentate, angled inwards in discal fold and oblique below vein 4; subterminal line whitish, dentate, defined on inner side by brown wedge-shaped marks, angled outwards at veins 7, 6; a terminal series of brown lunules defined on inner side by whitish; cilia whitish mixed with yellow-brown and with brown line through them. Hind wing whitish uniformly suffused with pale golden brown, a slight waved dark terminal line from apex to vein 3; cilia with a slight whitish line at base. Underside whitish tinged with pale golden brown; fore wing with the disk suffused with fuscous, a diffused postmedial line excurved from below costa to vein 2; hind wing with dark discoidal spot and curved postmedial line.

Hab. France; Germany, Zeller and Leech Colls.; Austria; Hungary; Switzerland, Frey Coll.; Scandinavia; Russia, Livonia, Zeller Coll., Kurland, Leech Coll., Urals; Armenia; W. Siberia, Altai; E. Siberia, Dahuria, Amurland, Ussuri. *Exp.* 48–60 millim.

Larva. Kirby, Butt. & Moths Eur. p. 192; Hffm. Raup. p. 111, pl. 30. f. 16.

Pale green; dorsal line white; lateral line yellowish white interrupted on 3rd to 6th somites; 12th somite with dorsal hump with oblique yellow lines running forwards from it on to 11th somite and oblique white line backwards. Food-plants: Sallow, Elm, &c. 5–6.

2765. Amphipyra tetra.

Noctua tetra, Fabr. Mant. Ins. ii. p. 138 (1787); Hübn. Eur. Schmett., Noct. f. 39; Godart, Lép. Fr. v. p. 143, pl. 57. f. 2; Staud. Cat. Lep. pal. p. 200.
Amphipyra pallida, Staud. Cat. Lep. pal. p. 200 (1901).

Head and thorax deep glossy red-brown; pectus and legs paler red-brown mixed with grey, the tarsi ringed with whitish; abdomen grey suffused with red-brown, the ventral surface red-brown mixed with white. Fore wing deep glossy red-brown finely irrorated with grey, the base of inner margin greyish; the lines and stigmata absent; three or four prominent white points on postmedial part of costa. Hind wing whitish uniformly suffused with bright red-brown; cilia with a fine whitish line at base; the underside

whitish tinged with red-brown, the costal area strongly irrorated with white.

Ab. 1. *pallida*. Paler; hind wing tinged with fuscous instead of red-brown.

Hab. Germany, Zeller Coll.; Austria; Hungary, Leech Coll.; Switzerland; Algeria; Armenia; Asia Minor, Lydia, Pontus; Syria; Persia; W. Siberia, Altai. *Exp.* 36–42 millim.

Larva. Kirby, Butt. & Moths Eur. p. 192; Hffm. Raup. p. 111.

Green with a dark dorsal line and whitish subdorsal line. Food-plant, *Hieracium*. 5–6.

2766. Amphipyra tragopoginis.

Noctua tragopoginis, Linn. Faun. Suec. p. 316 (1761); Clerck, Icones, pl. 1. f. 5; Esp. Schmett. iv. pl. 170. ff. 1, 2; Hübn. Eur. Schmett., Noct. f. 40; Godart, Lép. Fr. v. p. 145, pl. 57. f. 3; Steph. Ill. Brit. Ent., Haust. ii. p. 165; Smith, Cat. Noct. N. Am. p. 197; Staud. Cat. Lep. pal. p. 200.

Noctua luciola, Hüfn. Berl. Mag. iii. p. 294 (1767).

Agrotis repressus, Grote, Can. Ent. iii. p. 192 (1871).

Amphipyra turcomana, Staud. Stett. ent. Zeit. 1888, p. 32.

Head, thorax, and abdomen pale glossy red-brown; palpi fuscous brown; pectus and legs darker red-brown. Fore wing pale glossy red-brown irrorated with a few white scales; subbasal, antemedial, and postmedial lines absent; orbicular represented by a blackish point, the reniform by two points; subterminal line represented by a series of white points on the veins with a dark brown shade before them incurved below vein 3; a terminal series of slight black

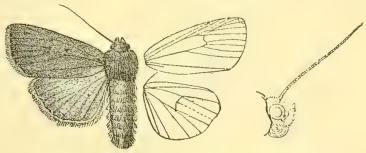


Fig. 6.—*Amphipyra tragopoginis*, ♂. ½.

lunules; cilia with a dark line near base. Hind wing whitish suffused with pale red-brown, the terminal area darker; a fine waved dark terminal line; cilia red-brown with a fine yellowish line at base; the underside whitish tinged with rufous, the costal and terminal areas to vein 2 red-brown irrorated with whitish, a small dark discoidal spot.

Ab. 1. *turcomana*. Paler; fore wing leaden grey with a yellowish tinge.

Hab. Canada, Ottawa (*Fletcher*, *Gibson*, *Saunders*), 2 ♂, 2 ♀; U.S.A., N.E. States to Pennsylvania and west to the Mississippi, New York, Buffalo, 1 ♀, Evans Center (*Grote*), 1 ♂, 1 ♀; Britain, Leech Coll.; France; Denmark, Leech Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary, Leech Coll.; Switzerland; Spain; Sicily; Balkan States; Russia, Livonia, Zeller

Coll., St. Petersburg, Zeller Coll.; Armenia; Asia Minor, Bithynia, Pontus, Amanus Mts., 1 ♂; Syria, 1 ♂; Persia; W. Siberia, Altai; Kashmir, Scinde Valley (*Leech*), 1 ♂; Punjab, Kulu, Sultanpur (*G. Young*), 1 ♂. *Exp.* 36–40 millim.

Larva. Meyr. Brit. Lep. p. 114; Barrett, Lep. Brit. v. p. 253, pl. 217. f. 2. Green; dorsal, subdorsal, and spiracular lines white or pale yellow, the last sometimes partly edged with black above; head green; somite 11 with slight prominence. Food-plants: *Plantago*, Hawthorn, *Aquilegia*, &c. 5–6.

2767. Amphipyra styx.

Amphipyra stix, Herr.-Schäff. Eur. Schmett. ii. p. 324 (1851), Noct. f. 473; Staud. Cat. Lep. pal. p. 199.

Head and thorax fuscous brown mixed with some white scales; pectus and legs whitish mixed with brown, the tarsi black ringed with white; abdomen grey suffused with brown, the ventral surface whitish. Fore wing glossy fuscous brown irrorated with grey; subbasal, antemedial, and postmedial lines absent; orbicular a minute indistinct black annulus; reniform represented by a few black scales; some white points on postmedial part of costa: subterminal line diffused whitish, erect, slightly sinuous. Hind wing whitish tinged with brown, the terminal area suffused with fuscous; cilia whitish mixed with brown to vein 2 and with slight yellowish line at base; the underside white tinged with ochreous, the costal area irrorated with brown beyond middle and the termen suffused with brown.

Hab. Balkan States; Armenia; Asia Minor, Bithynia, Amanus Mts., 1 ♂; Palestine. *Exp.* 32 millim.

2768. Amphipyra schrenci. (Plate CVIII. fig. 14.)

Amphipyra schrenckii, Mén. Bull. Ac. Petr. xvii. p. 219 (1858); id. Schrenck's Reise in Amurland, p. 61, pl. 5. f. 4 (1859); Staud. Cat. Lep. pal. p. 200.

Head and thorax grey-brown; palpi fuscous, whitish in front; pectus and legs whitish tinged with brown; tarsi fuscous ringed with white; abdomen pale grey-brown. Fore wing glossy grey-brown slightly irrorated with grey; subbasal line represented by oblique dark striæ from costa and cell defined by whitish on outer side; antemedial line indistinct, dark, slightly defined on inner side by whitish at costa, oblique, waved, angled outwards below costa and above inner margin and inwards on vein 1; orbicular represented by a small white spot slightly defined by blackish, the reniform with very faint irregular whitish annulus; postmedial line indistinct, dark, slightly defined by greyish on outer side, bent outwards below costa, incurved at discal fold and below vein 3, excurved at vein 1, some white points beyond it on costa; subterminal line very indistinct, excurved at vein 6, then oblique; an apical white patch slightly irrorated with brown and with some dark

terminal lunules on it; cilia brown mixed with grey, paler at apex and with fine pale line at base. Hind wing grey suffused with brown; cilia with a fine pale line at base; the underside grey suffused and irrorated with brown, a large dark discoidal spot and rather diffused curved postmedial line.

Ab. 1. Fore wing with the apical white patch obsolescent.

Ab. 2. Fore wing with the apical white patch absent.—C. China.

Hab. W. Siberia, Amurland, 2 ♀, Ussuri; Japan, Hakodaté (*Pryer*), 1 ♀, Oiwaké (*Pryer*), 4 ♂, 1 ♀, Kiushiu, 1 ♀, Tokio (*Fenton*), 2 ♀; Corea, Korniloff (*Fletcher*), 1 ♂; Centr. China, Chang-yang (*Pratt*), 2 ♂. *Exp.* 54–68 millim.

2769. Amphipyra subrigua. (Plate CVIII. fig. 15.)

Amphipyra subrigua, Brem. Schmett. N. China, p. 17 (1853).

Head and thorax dark red-brown mixed with ochreous grey; tarsi ringed with ochreous; abdomen ochreous suffused with red-brown, the ventral surface dark red-brown except at base. For wing dark glossy red-brown, the disk strongly irrorated with grey; subbasal line represented by a slight dark striga from costa defined by ochreous on outer side; antemedial line blackish slightly defined by ochreous on inner side, waved, erect; orbicular minute, round, with faint pale annulus; reniform absent; a faint dark mark at middle of costa; postmedial line formed of small black lunules defined by ochreous grey on outer side, slightly bent outwards below costa, incurved at discal fold and below vein 4, some ochreous points beyond it on costa; subterminal line very faint, formed by ochreous scales, slightly excurved at vein 6 and incurved below vein 3; a slight waved dark terminal line with greyish points before it at the veins; cilia with a fine ochreous line at base. Hind wing greyish suffused with reddish brown, the terminal area darker; cilia with a fine pale line at base; the underside whitish tinged with red-brown, the costal area except towards base and the terminal area irrorated with brown, a dark discoidal spot and diffused curved, waved postmedial line from costa to vein 2 rather near termen.

Hab. N. China; W. China, Omei-shan, 1 ♂, Ni-tou, 1 ♂, 1 ♀, Wa-ssu-kow, 2 ♂, 1 ♀, Ta-chien-lu (*Pratt*), 2 ♂. *Exp.* 42–46 millim.

2770. Amphipyra micans. (Plate CIX. fig. 1.)

Amphipyra micans, Led. Wien. ent. Mon. 1857, p. 94; Staud. Cat. Lep. pal. p. 199.

Amphipyra frivaldskyi, Mocsáry, Termes. Fuzetek, xix. pp. 125, 225, pl. iv. f. 1 (1896).

Head and thorax red-brown mixed with grey and fuscous; tegulæ with diffused blackish lines near base and tips; tarsi black ringed with white; abdomen reddish brown mixed with grey. Fore wing red-brown irrorated with dark brown and whitish, the antemedial area to median nervure, the medial area to below cell

and before the postmedial line to inner margin, and the terminal area suffused with dark brown; a small tuft of white scales at base; subbasal line black, double filled in with whitish at costa, waved, from costa to submedian fold, in which there is a black streak from it to antemedial line, which is double filled in with whitish at costa and inner margin, oblique, waved, angled outwards below costa; orbicular a small pure white spot defined by black, rather oblique elliptical; reniform a very ill-defined blackish mark with some white scales on its lower inner extremity; medial line blackish, diffused, oblique from costa to below cell, then sinuous, with some rufous before and beyond it on costa; postmedial line black defined by whitish on outer side, slightly bent outwards below costa, then sinuous, incurved at discal fold and below vein 4, some whitish points beyond it on costa; subterminal line very indistinct, pale with wedge-shaped black marks before it from below costa to vein 1, then with black streaks beyond it to vein 2, excurved below vein 7; a terminal series of small black lunules, with whitish points on their inner side; cilia chequered fuscous and rufous. Hind wing pale suffused with red-brown, the terminal area slightly darker; a slight brown terminal line; cilia whitish tinged with rufous and with diffused brown line through them; the underside white tinged with reddish, the costal and terminal areas irrorated with brown, a black discoidal spot and waved postmedial line bent inwards to costa.

Hab. Hungary; Bulgaria; Asia Minor, Pontus, Taurus; Syria, 1 ♂, 1 ♀. *Exp.* 32 millim.

2771. **Amphipyra molybdea.** (Plate CIX. fig. 2.)

Amphipyra molybdea, Christ. Stett. ent. Zeit. 1867, p. 235; Staud. Cat. Lep. pal. p. 200.

♀. Head and thorax dark brown mixed with ochreous; tarsi black ringed with white; abdomen whitish irrorated with brown. Fore wing ochreous white almost entirely suffused with brown and irrorated with fuscous, the terminal area wholly suffused with brown; subbasal line represented by slight double dark striæ from costa; antemedial line indistinctly double filled in with whitish, waved, almost erect; orbicular small, round, white slightly defined by black; reniform small with slight whitish annulus, open below; a blackish mark in cell between the stigmata; a faint diffused waved medial line; postmedial line black slightly defined by whitish on outer side and by whitish spots at costa and submedian fold, bent outwards below costa and strongly incurved in discal fold and below vein 4, some white points beyond it on costa; subterminal line represented by a few whitish scales towards costa; a terminal series of slight black lunules with minute white striga before the lunule in submedian fold; cilia with a slight pale line at base. Hind wing glossy ochreous white faintly tinged with brown, the terminal area suffused with brown; cilia brownish with pale line at base from apex to vein 2, whitish towards tornus; the underside

yellowish white, the costal and terminal areas irrorated with brown and the termen suffused with brown, a blackish discoidal spot and waved sinuous postmedial line.

Hab. S. Russia, Sarepta; Asia Minor, Taurus Mts., 1 ♀. *Exp.* 30 millim.

2772. Amphipyra alpheraci. (Plate CIX. fig. 3.)

Acosmetia alpherakii, Staud. Stett. ent. Zeit. 1888, p. 30; id. Cat. Lep. pal. p. 199.

Head, thorax, and abdomen white faintly tinged with red-brown; tarsi ringed with white. Fore wing glossy grey-white tinged with pale red-brown; subbasal line represented by an oblique dark striga from costa and point below cell; antemedial line very indistinct, waved, with more prominent striga from costa; orbicular absent; the reniform represented by a small faint whitish lunule; postmedial line indistinct, dark, slightly defined by whitish on outer side at costa, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line white, slightly angled outwards at vein 7 and incurved below vein 3, with diffused white streaks beyond it in the interspaces; a terminal series of slight brown lunules; cilia tinged with red-brown and with yellowish line at base. Hind wing whitish uniformly tinged with rufous; cilia white tinged with rufous at base; the underside white, the costal area tinged with rufous, a faint dark discoidal lunule and diffused subterminal band from costa to vein 4.

Ab. 1. Fore wing with the cell and interspaces beyond it between veins 7 and 2 suffused with fuscous to subterminal line, leaving whitish streaks on the veins; hind wing more rufous.—Transcaspia.

Hab. W. Turkestan, Transcaspia, Tedschen Oasis (*Hauser*), 1 ♂, 1 ♀; E. Turkestan, Ili, 1 ♂, 1 ♀. *Exp.* 30–36 millim.

2773. Amphipyra glabella. (Plate CIX. fig. 4.)

Pyrophila glabella, Morr. Proc. Bost. Soc. N. H. xvii. p. 153 (1874); Smith, Cat. Noct. N. Am. p. 197.

Head and thorax grey-white mixed with some brown; abdomen grey tinged with brown, the anal tuft pale rufous. Fore wing grey-white irrorated and suffused with brown, the terminal area whiter, the veins beyond the cell with slight pale streaks; subbasal line indistinct, double, curved, from costa to vein 1; antemedial line very indistinct, double, sinuous, oblique and rather more prominent at costa, angled outwards below costa; orbicular a small blackish spot; reniform a slight whitish mark with two dark points on it and an oblique striga before it; postmedial line blackish defined by white on outer side, interrupted at the veins, bent outwards below

costa, excurved to vein 4, then incurved and with a more distinct white spot at submedian fold, some white points beyond it on costa with dark streaks between them; subterminal line only defined by dark suffusion before it, forming blackish streaks in the interspaces between veins 8 and 3, slightly incurved below costa, then minutely waved; a terminal series of small black lunules; cilia tinged with pale rufous. Hind wing white tinged with brown, rather darker towards termen on which there is a narrow white band before the slight waved dark terminal line; cilia white faintly tinged with brown at base; the underside white faintly tinged with brown, a slight discoidal spot and indistinct dark curved postmedial line, some slight dark lunules on middle of termen.

Ab. 1. Head, thorax, and fore wing to subterminal line suffused with fuscous black.

Hab. U.S.A., Pennsylvania, Illinois, Nebraska, Colorado, Glenwood Springs (*Oslar*), 2 ♂, 1 ♀, California, Havilah, 3 ♀, Arizona. *Exp.* 34–42 millim.

2774. Amphipyra sergii. (Plate CIX. fig. 5.)

Acosmetia sergei, Staud. Stett. ent. Zeit. 1888, p. 31; id. Cat. Lep. pal. p. 199.

Head and thorax white mixed with black-brown; tarsi fuscous ringed with white; abdomen white tinged with brown. Fore wing grey-white irrorated with black-brown, the postmedial area suffused with black-brown, the terminal area whiter, the veins streaked with white; subbasal line represented by a slight oblique whitish striga from costa; antemedial line indistinct, double, filled in with whitish, oblique from costa to submedian fold where it is angled outwards, then erect: claviform very faintly defined by blackish; orbicular and reniform with blackish centres and fine white annuli, the former small, elongate elliptical, the latter strongly constricted at middle and angled inwards on median nervure; a faint erect medial line bent inwards to costa; postmedial line black defined by white on outer side, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line only defined by the contrast between the postmedial and terminal areas, slightly excurved at vein 7, then straight, erect; a terminal series of black striæ; cilia whitish with series of blackish lunules near base and blackish tips. Hind wing white tinged with brown; a diffused brownish subterminal band, the termen whiter; a terminal series of slight dark lunules from apex to vein 2; cilia white slightly mixed with brown; the underside white, the costal area slightly irrorated with brown, an indistinct dark discoidal spot and faint curved postmedial line from costa to vein 2.

Hab. W. Turkestan, Dscharkend, 1 ♂, 1 ♀; E. Turkestan, Ili. *Exp.*, ♂ 38, ♀ 44 millim.

Genus **BITYLA.**

Type.
Bityla, Wlk. xxxiii. 869 (1865) ..... *defigurata.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about middle of frons and broadly fringed with hair in front, the 3rd short; frons smooth; eyes large, round; antennæ of male ciliated; head and thorax clothed with long hair only and without crests; tibiæ moderately fringed with hair; abdomen dorsally flattened and without crests. Fore wing with the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing brown.
  a. Fore wing with the cilia brown..... *defigurata.*
  b. Fore wing with the cilia whitish, pure white at base..... *sericea.*
B. Fore wing white ..... *pallida.*

2775. Bityla defigurata.

Xylina defigurata, Wlk. xxxiii. 756 (1865); Hudson, N. Zealand Moths & Butterflies, p. 29, pl. 5. f. 33.
Bityla thoracica, Wlk. xxxiii. 869 (1865).

Head and thorax dark red-brown; tarsi with slight pale rings; abdomen dark brown, the anal tuft tinged with fulvous. Fore wing dark reddish brown slightly irrorated with greyish; antemedial line very indistinct, oblique, waved; stigmata absent; postmedial line indistinct, slightly defined by greyish on outer side, bent outwards below costa, excurved to vein 4, then oblique, waved;

Fig. 7.—*Bityla defigurata*, ♂. ½.

subterminal line absent. Hind wing uniform dark reddish brown; cilia with a slight grey line at base; the underside irrorated with greyish, a dark discoidal lunule and indistinct diffused curved postmedial line.

Hab. N. Zealand, S. Island (*Colenso*, *Bolton*, *Hector*, *Mathew*), 1 ♂, 3 ♀, type *thoracica*, Auckland (*Oxley*), 1 ♂ type, Dunedin (*Purdie*), 1 ♂, 1 ♀, Marlborough (*Skelton*), 1 ♀, Okato (*J. J. Walker*), 1 ♀, Blenheim, Christchurch, Lake Coleridge; Invercargill, N. Island, Palmerston. *Exp.* 40–46 millim.

2776. Bityla sericea.

Bityla sericea, Butl. P. Z. S. 1877, p. 387, pl. 42. f. 12; Hudson, N. Zealand Moths & Butterflies, p. 29, pl. 5. f. 34.

♀. Head and thorax reddish brown tinged with greyish; tarsi ringed with white; abdomen yellowish white, dorsally suffused with

brown, ventrally irrorated with black. Fore wing brown, suffused and irrorated with grey except on terminal area; antemedial line dark, slightly defined by grey on inner side, waved, somewhat oblique; stigmata absent; postmedial line dark defined by grey on outer side, bent outwards below costa, then oblique, minutely dentate, some slight white points beyond it on costa; subterminal line absent; cilia white at base, white mixed with brown at tips. Hind wing greyish brown; cilia white tinged with brown at base; the underside whitish irrorated with brown, indistinct diffused brown postmedial and subterminal lines.

Hab. N. Zealand, N. Island, Wellington, S. Island (*Hector*), 1 ♀ type, Christchurch, Lake Guyon. *Exp.* 42 millim.

2777. Bityla? pallida. (Plate CIX. fig. 6.)

Orthosia pallida, Hudson, Tr. N. Z. Inst. xxxvii. p. 355 (1905).

♀. Head, thorax, and abdomen white tinged with ochreous brown. Fore wing white slightly irrorated with ochreous brown; subbasal line represented by two widely-separated brown striæ from costa; antemedial line indistinct, oblique, waved; orbicular and reniform hardly traceable; a diffused waved brown medial shade, oblique from costa to lower angle of cell, then incurved; postmedial line brownish, bent outwards below costa, then waved, oblique to vein 4, then inwardly oblique; subterminal and terminal lines absent. Hind wing white tinged with brown, especially the terminal area from apex to vein 2; a fine brown terminal line slightly defined by white on inner side; cilia white. Underside white; fore wing with the disk suffused with brown; hind wing with the terminal area suffused with brown from apex to vein 2.

Hab. N. Zealand, Napier (*Simmonds*), 1 ♀ co-type in bad condition. *Exp.* 36 millim.

Genus GRACILIPALPUS.

	Type.
Gracilipalpus, Calb. Iris, i. p. 270 (1888)	*ephialtes.*
Micromania, Christ. Iris, vi. p. 93 (1893); Alph. Iris, vii. pp. 312, 376 (1894)	*turcomanica.*

Proboscis fully developed; palpi upturned, the 2nd joint broadly fringed with scales in front and reaching vertex of head, the 3rd long; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed with scales and hair mixed, the pro- and metathorax with spreading crests; tibiæ fringed with rather long hair; abdomen without crests. Fore wing short and broad, the apex rounded, the termen evenly curved, crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the outer part of medial area suffused with black, the postmedial line filled in with white ..... *turcomanica.*

B. Fore wing with the outer part of medial area not suffused with black, the postmedial line not filled in with white. *ephialtes.*

2778. Gracilipalpus turcomanica.

Micromania turcomanica, Christ. Iris, vi. p. 93 (1893); Alph. Rom. Mém. ix. p. 223, pl. 8. f. 11; Staud. Cat. Lep. pal. p. 199.

Head and thorax fuscous brown with a faint reddish tinge; abdomen grey-brown. Fore wing grey suffused with black-brown and with a faint reddish tinge, the medial area except beyond the reniform and the costal half of postmedial area darker; subbasal line blackish, double, filled in with grey, from costa to median nervure; antemedial line double filled in with grey, slightly waved and somewhat oblique; orbicular hardly traceable, rounded; reniform with its centre slightly defined by blackish and faint pale annulus; an indistinct diffused blackish medial line; postmedial line double, black filled in with grey, bent outwards below costa, excurved to vein 4, then incurved and erect below vein 3, some whitish points beyond it on costa; subterminal line whitish, defined on inner side by black-brown suffusion except on inner area, excurved at vein 7 and middle and angled inwards in discal fold; a terminal series of small black lunules; cilia fuscous brown. Hind wing fuscous brown; an indistinct oblique whitish line just beyond middle except on costal area; a waved blackish terminal line; cilia with a fine pale line at base; the underside brownish grey irrorated with brown except at base, a blackish discoidal spot and curved minutely waved postmedial line.

Hab. W. Turkestan, Turcomania, Aschabad, 1 ♂, 1 ♀. *Exp.* 38 millim.

2779. Gracilipalpus ephialtes.

Noctua ephialtes, Hübn. Eur. Schmett., Noct. f. 652 (1822); Rmbr. Cat. Lép. S. And. pl. 7. f. 7; Staud. Cat Lep. pal. p. 199.
Ophiusa nubilaris, Graslin, Ann. Soc. Ent. Fr. 1836, p. 568, pl. 17. f. 8.

Head and tegulæ ochreous whitish tinged with rufous; palpi and antennæ brown; thorax and abdomen glossy grey-brown, the tarsi with slight pale rings. Fore wing glossy grey-brown with slight dark irroration; subbasal line indistinct, dark, oblique, sinuous,

Fig. 8.—*Gracilipalpus ephialtes*, ♂. ½.

from costa to vein 1; antemedial line indistinct, dark, oblique and slightly sinuous to submedian fold, then erect; orbicular absent; the reniform represented by a faint diffused dark patch; a faint diffused dark medial shade; postmedial line blackish slightly defined by greyish on outer side and indistinctly double towards costa, slightly bent outwards below costa, very minutely waved and

excurved to vein 2, then erect, some pale points beyond it on costa ; subterminal line indistinct, greyish defined on inner side by fuscous suffusion, slightly excurved at vein 7 and middle ; a fine waved black terminal line ; cilia with a fine ochreous line at base. Hind wing greyish brown with a faint reddish tinge ; a faint postmedial line from vein 4 to inner margin near tornus, slightly defined by greyish on outer side ; a slight dark terminal line ; cilia with a slight ochreous line at base ; the underside with slight dark irroration and traces of postmedial line between veins 7 and 3.

Hab. Spain, Granada ; Centr. Italy ; Sicily ; Morocco (*Meade-Waldo*), 1 ♂, 1 ♀. *Exp.*, ♂ 36, ♀ 40 millim.

Genus **STYGIOSTOLA**, nov.

Type, *S. umbratica*.

Proboscis fully developed ; palpi upturned, the 2nd joint reaching vertex of head and broadly fringed with hair, the 3rd moderate, porrect ; frons smooth ; eyes large, round ; antennæ of male bipectinate with long branches to apex, of female with tufts of scales on the joints ; thorax clothed with long hair and hair-like scales, the pro- and metathorax with spreading crests ; tibia moderately fringed with hair ; abdomen clothed with rough hair at base but without crests. Fore wing with the apex rounded, the termen evenly curved, not crenulate ; veins 3 and 5 from near angle of cell ; 6 from upper angle ; 9 from 10 anastomosing with 8 to form the areole ; 11 from cell. Hind wing with the termen excised at discal fold ; veins 3, 4 from angle of cell ; 5 obsolescent from middle of discocellulars ; 6, 7 from upper angle ; 8 anastomosing with the cell near base only.

2780. Stygiostola umbratica.

Noctua umbratica, Goeze, Beitr. iii. 3. p. 67 (1781) ; Staud. Cat. Lep. pal. p. 199.

Noctua tenebrosa, Hübn. Eur. Schmett., Noct. ff. 158, 503 (1802) ; Frr. Neue Schmett. i. pl. 40 ; Dup. Lép. Fr. vi. p. 11, pl. 72.

Rusina ferruginea, Steph. Ill. Brit. Ent., Haust. ii. p. 112, nec Esp.

Head and thorax dark reddish brown mixed with greyish ; tarsi ringed with white ; abdomen grey-brown, paler at base. Fore wing fuscous brown irrorated with greyish, the inner area to postmedial

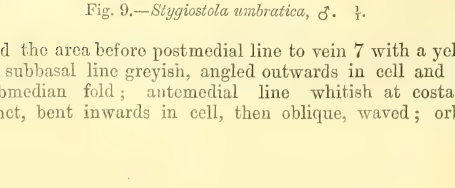


Fig. 9.—*Stygiostola umbratica*, ♂. ½.

line and the area before postmedial line to vein 7 with a yellowish tinge ; subbasal line greyish, angled outwards in cell and ending at submedian fold ; antemedial line whitish at costa, then indistinct, bent inwards in cell, then oblique, waved ; orbicular

and reniform slightly defined by blackish, the former small, round, the latter irregular with some whitish scales on outer edge; a distinct dark medial shade; postmedial line blackish, defined on outer side by white towards costa, then by yellowish, bent outwards below costa, then minutely dentate, slightly incurved below vein 4, some white points beyond it on costa; subterminal line indistinct, whitish slightly defined by brown on inner side, excurved below vein 7 and at middle; cilia mixed with grey at tips. Hind wing greyish uniformly suffused with brown; a slight brown terminal line; cilia brown with yellowish line at base and greyish line near tips; the underside grey irrorated with brown, the costal area suffused with brown, a dark discoidal spot and indistinct diffused curved postmedial line.

Hab. Britain, Scotland, Forres (*Salvage*), England, Leech Coll.; France, Sand Coll.; Denmark, Leech Coll.; Germany, Zeller & Leech Colls.; Austria, Frey Coll., Tirol (*Hampson*); Switzerland, Engadine, Zeller Coll.; N. Italy; Bulgaria; Russia, Livonia, Zeller Coll.; Armenia. *Exp.* 36–40 millim.

Larva. Meyr. Brit. Lep. p. 113; Barrett, Lep. Brit. v. p. 238, pl. 216. f. 1. Ochreous brown; dorsal line sometimes indistinctly paler; a subdorsal series of pale oblique marks dark-edged below sometimes present; lateral line pale; head dark brown. Food-plants: *Viola*, *Rumex*, *Polygonum*, &c. 8–3.

Genus ORTHOGONICA, n. n.

Type.

Orthogonia, Feld. Wien. ent. Mon. vi. p. 38 (1852), nec *Orthogonius*, Dej. Col. 1825 ..... *sera.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to vertex of head and broadly angled with hair in front, the 3rd rather long and fringed with hair in front; frons smooth, with tuft of hair; eyes large, round; antennæ of male minutely ciliated; thorax clothed chiefly with scales, the tegulæ produced to a dorsal ridge, the prothorax with triangular crest followed by a double ridge-like crest; tibiæ moderately fringed with hair; abdomen with small dorsal crests on basal segments and lateral fringes of hair towards extremity. Fore wing with the costa arched at base, then nearly straight, the apex somewhat produced, the termen crenulate and somewhat excised towards tornus, the cilia stongly dentate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the antemedial line angled at median nervure, postmedial line present.
  a. Fore wing with the antemedial line straight and very oblique below median nervure.
    *a*¹. Fore wing with the postmedial line minutely waved *plana.*
    *b*¹. Fore wing with the postmedial line not waved ..... *plumbinotata.*
  b. Fore wing with the antemedial line less oblique below median nervure and excurved at vein 1..... *sera.*
B. Fore wing with the antemedial line indistinct, strongly and evenly curved, postmedial line absent .. .. *grisea.*

2781. **Orthogonica plana.** (Plate CVIII. fig. 16.)

Orthogonia plana, Leech, Trans. Ent. Soc. 1900, p. 50.

Head and thorax bright red-brown; palpi yellow mixed with brown and with brownish band near extremity of 2nd joint; frons with lateral black bars; vertex of head with two slight dark marks; prothoracic crest yellowish with grey patch behind it; pectus and legs with some ochreous and rufous; abdomen grey-brown, the anal tuft at extremity and ventral surface rufous. Fore wing bright red-brown, the inner margin with greyish fascia; subbasal line indistinctly double filled in with greyish, oblique from costa to median nervure, then with slight dark mark before it and ending at submedian fold; a dark point in cell before the antemedial line, which is double at costa, oblique to median nervure, then very oblique to above inner margin near base, defined by silvery grey on inner side and with diffused black patch beyond it below vein 1; claviform represented by a dark point at its extremity; orbicular a very small blackish spot; reniform very faintly defined by brownish, its upper extremity produced to a point; medial line slight, oblique from costa to lower angle of cell and angled outwards at subcostal nervure, then inwardly oblique and waved; postmedial line indistinct, bent outwards below costa, then minutely waved and with series of black points beyond it on the veins, incurved at discal and submedian folds and bent outwards at vein 1, some yellowish points beyond it on costa; subterminal line yellowish, minutely waved, defined on inner side by a slight brown line and dark points, met at vein 5 by an oblique brown streak from termen at vein 7, then defined by brown on outer side and erect to tornus; a terminal series of slight brown points; cilia red-brown at base, yellow at tips. Hind wing dark red-brown; cilia yellow with a brown line near base; the underside slightly tinged with greyish, a curved brown postmedial line.

Ab. 1. Fore wing with the postmedial area paler and more ochreous striated with brown.

Ab. 2. Fore wing much greyer brown.

Ab. 3. Fore wing with the ground-colour pale olive-brown.

Hab. W. China, Omei-shan, 1 ♂, Chang-yang (*Pratt*), 2 ♂, Washan (*Pratt*), 1 ♂, Ni-tou, 2 ♂, Wa-ssu-kow, 2 ♂, Chia-kou-ho, 1 ♂, 1 ♀, Chow-pin-sa, 1 ♂, Pu-tsu-fang, 1 ♂, Ta-chien-lu (*Pratt*), 3 ♂, 2 ♀ type. *Exp.* 66–72 millim.

2782. **Orthogonica plumbinotata**, n. sp. (Plate CVIII. fig. 17.)

Head ochreous tinged with rufous; palpi with dark band near extremity of 2nd joint; frons with lateral black bars; vertex of head with two slight brown marks; thorax dark red-brown with grey dorsal fascia, the tegulæ with slight ochreous medial line; pectus and legs ochreous tinged with rufous; abdomen grey-brown, the anal tuft mixed with rufous, the ventral surface ochreous. Fore wing pale rufous, the medial area except towards costa beyond antemedial line and the terminal area except at apex red-brown

suffused with silvery grey in places, the inner half of antemedial area suffused with silvery grey, the postmedial area striated with brown, the median nervure streaked with white on medial area, the veins of terminal area with slight pale streaks and the inner margin with rufous fascia except at base; a slight ochreous mark at base below cell; subbasal line double filled in with grey, oblique from costa to a brown mark in cell, a small semicircular brown and ochreous mark beyond it in cell; antemedial line double and filled in with silvery grey from costa to median nervure, oblique and sinuous to median nervure, then very oblique to inner margin near base, with diffused black-brown fascia beyond it above vein 1; claviform represented by a small black spot at its extremity with some silvery grey beyond it; orbicular and reniform with silvery grey centres and slight ochreous annuli, the former small, oblique elliptical, the latter a very large oblique lunule defined by black except above and with fine curved dark line in centre, some black-brown in lower part of cell between them and beyond the reniform; medial line very oblique from costa to reniform, oblique below cell and incurved in submedian fold; postmedial line indistinctly double towards costa and below vein 2, slightly bent outwards below costa, then with series of black points beyond it on the veins, incurved to vein 4 where it is angled outwards, then incurved and bent outwards at vein 1; a pale apical patch defined by red-brown suffusion on inner side; subterminal line dark brown, arising from termen at vein 7, oblique to vein 5, then with greyish and red-brown band on inner side and straight to tornus; a terminal series of slight brown spots; cilia ochreous and brown with ochreous line at base. Hind wing dark red-brown; cilia with ochreous line at base followed by a red-brown line, the tips white; the underside tinged with greyish and with indistinct curved postmedial line.

Ab. 1. Fore wing with some grey suffusion on postmedial area and at apex and a whitish patch beyond postmedial line in submedian interspace.

Ab. 2. Fore wing with the ground-colour dark grey-brown.

Hab. W. China, Chang-yang (*Pratt*), 1 ♂ type, Wa-shan (*Pratt*), 1 ♂, Kwei-chow, 1 ♂, 1 ♀, Wa-ssu-kow, 1 ♂. *Exp.* 62–76 millim.

2783. Orthogonica sera.

Orthogonia sera, Feld. Wien. ent. Mon. vi. p. 38 (1862); id. Reis. Nov. pl. 112. f. 15.

Orthogonia crispina, Butl. A. M. N. H. (5) i. p. 288 (1878); id. Ill. Het. B. M. ii. p. 36, pl. 32. f. 6.

Head and thorax red-brown slightly mixed with greyish, the vertex of thorax with pale grey stripe, the tegulæ and patagia above slightly edged with grey; palpi greyish in front; hind legs pale greyish; abdomen grey-brown, the anal tuft rufous, the ventral surface pale. Fore wing grey slightly tinged with rufous and with slight dark striæ, the medial area dark red-brown, the terminal

area suffused with rufous except at apex, the median nervure and veins of terminal area with slight pale streaks, the inner margin with narrow pale fascia; base of costal area red-brown angled outwards in cell and bounded by the subbasal line which is represented by a black bar from costa and a rather Y-shaped mark below the cell with black-brown patch below it on inner area; antemedial line indistinctly double at costa and with black mark on

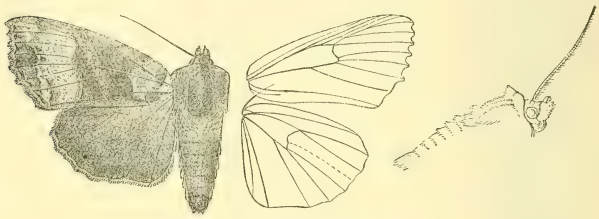


Fig. 10.—*Orthogonica sera*, ♂. ½.

the outer line, oblique and sinuous to median nervure where it is angled, then inwardly oblique and slightly excurved at vein 1, with a dark band beyond it from cell to inner margin; orbicular and reniform very large with slight greyish annuli defined by black at sides, the former erect oblong, open above and below, the latter oblique oblong, obliquely rounded above, with some dark suffusion in middle and a dark patch beyond its lower part, an oblique striga from costa to orbicular and oblique line from lower angle of cell to inner margin; postmedial line with double dark striæ at costa, bent outwards below costa, then inwardly oblique and approximated to reniform at discal fold, excurved to vein 3, then incurved and strongly bent outwards at vein 1; a grey apical patch slightly defined by brown on inner side, the subterminal line arising from its lower edge at vein 6, grey slightly defined on each side by brown and with two black points on its inner side and some blackish on outer side at discal fold, inwardly oblique to vein 5, then nearly erect and slightly irregular to tornus; a terminal series of small black spots, obsolescent at apex; cilia pale rufous, greyish at apex. Hind wing glossy fuscous brown, the basal and inner areas tinged with greyish; cilia whitish tinged with rufous at base; the underside grey tinged with rufous and the terminal area with fuscous, an indistinct curved postmedial line.

Ab. 1. Fore wing with the ground-colour pale red-brown.

Ab. 2. Fore wing with the ground-colour dark grey-brown.

Hab. Japan, Tokio (*Fenton*), 1 ♂, 1 ♀, Yokohama (*Jonas*, *Pryer*), 3 ♂, 1 ♀, type *crispina*; Centr. China, Ningpo, Kiukiang (*Pratt*), 1 ♂, 1 ♀, Omei-shan, 1 ♀. *Exp.* 56–68 millim.

2784. Orthogonica grisea. (Plate CVIII. fig. 18.)

Orthogonia grisea, Leech, Trans. Ent. Soc. 1900, p. 50.

Head and thorax dark red-brown finely pencilled with grey; tegulæ and patagia slightly edged with grey; hind legs pale; abdomen red-brown, the ventral surface pale. Fore wing grey tinged with brown and striated with blackish, the terminal area darker brown, broad at costa, narrowing to tornus, the veins of terminal area with slight pale streaks, the inner margin with slight rufous fascia; subbasal line represented by an oblique black band from costa to above vein 1, curved outwards as a slender hook at extremity and with black spot below it above inner margin; antemedial line indistinct, strongly curved, with dark striga from costa; orbicular absent; reniform very indistinct, oblique oblong; an indistinct medial line, oblique from costa to lower angle of cell, then inwardly oblique; postmedial and subterminal lines absent; a small black spot on inner edge of the dark terminal area below vein 5; cilia with a fine pale line at base. Hind wing dark red-brown, the terminal area rather darker, an indistinct oblique medial line; cilia with fine pale line at base followed by a brown line, the tips white; the underside slightly tinged with greyish, a slight dark discoidal bar and curved postmedial line.

Hab. W. China, Omei-shan, 2 ♂, 1 ♀ type. *Exp.* 60–68 millim.

Genus **MANIA**.

	Type.
Mormo, Ochs. Schmett. Eur. iv. p. 70 (1816), non descr.	*maura*.
Mania, Treit. Schmett. Eur. v. (1) p. 294 (1825)	*maura*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about vertex of head and moderately scaled in front, the 3rd moderate; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed with scales and hair mixed, with divided crests on pro-, meso-, and metathorax; tibiæ moderately fringed with hair; abdomen clothed with rough hair, with dorsal series of crests and lateral fringes of hair. Fore wing very broad, the apex rectangular, the termen evenly curved and the termen and cilia strongly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Hind wing with pale medial line ..... *maura*.
B. Hind wing without pale medial line.
  a. Fore wing with the medial area suffused with blackish, the inner margin with pale fascia.
    *a*¹. Fore wing with the postmedial line oblique and sinuous below vein 5 ..... *muscivirens*.
    *b*¹. Fore wing with the postmedial line incurved below vein 4 ..... *venata*.
  b. Fore wing with the medial area concolorous, the inner margin without pale fascia.
    *a*¹. Fore wing with the antemedial line very oblique and straight below submedian fold ..... *nyctichroa*.

b^1. Fore wing with the antemedial line less oblique and slightly sinuous below submedian fold.
a^2. Fore wing grey-brown without series of whitish points beyond postmedial line ..... *phæochroa.*
b^2. Fore wing olive-brown with series of whitish points beyond postmedial line ..... *olivescaria.*

2785. Mania maura.

Noctua maura, Linn. Syst. Nat. ed. x. p. 512 (1758); Esp. Schmett. iv. pl. 107. f. 1; Hübn. Eur. Schmett., Noct. f. 326; Frr. Beitr. pl. 53; Godart, Lép. Fr. v. pl. 54. ff. 1, 2; Don. Brit. Ins. vii. pl. 230. f. 1; Steph. Ill. Brit. Ent., Haust. iii. p. 129; Staud. Cat. Lep. pal. p. 185.
Phalæna lemur, Meinecke, Naturf. vi. pl. 5. f. 1 (1775).

Head and thorax fuscous brown mixed with grey; patagia with grey upper edge, the tips of crests grey; abdomen dark fuscous brown, the crests grey at tips. Fore wing grey tinged with flesh-colour and fuscous, the medial area dark fuscous brown except on

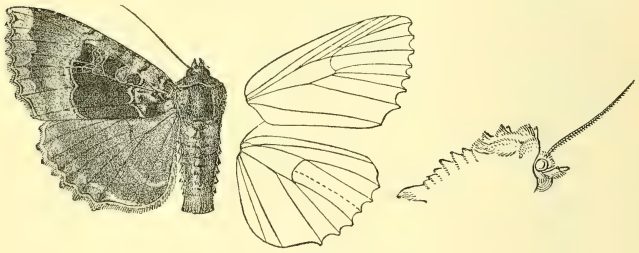


Fig. 11.—*Mania maura*, ♂. ½.

costal area; subbasal line represented by double curved black striæ from costa filled in with grey and double oblique black marks from cell filled in with grey; antemedial line with double oblique widely separated fuscous striæ from costa, then indistinctly double filled in with grey, curved and sinuous to vein 1, then strongly bent inwards to inner margin; orbicular grey slightly defined by black scales and with its centre irrorated with some black scales, obliquely lunulate, concave towards base; reniform large, blackish, irrorated with some greyish and with pale annulus slightly defined by black, angled inward on subcostal nervure and on median nervure to near orbicular, its outer edge minutely waved and its lower extremity produced and truncate; an oblique diffused fuscous striga from costa to reniform; the inner margin with slight reddish streak on medial area; postmedial line double, the lines widely separated at costa and filled in with greyish, slightly bent outwards below costa, then erect and very slightly sinuous; subterminal line ochreous grey defined on inner side by a broad irregular band of fuscous suffusion, narrowing at submedian fold and with some pale points

on costa, angled outwards below vein 7 and at veins 4, 3, bent outwards to tornus; the terminal area greyish ochreous at apex and middle, and suffused with fuscous above middle and towards tornus; a waved black terminal line; cilia fuscous, tinged with ochreous at apex and with ochreous line at base. Hind wing fuscous brown with terminal pinkish ochreous band, with diffused fuscous spots on it between veins 6 and 2; a narrow pinkish ochreous band just beyond middle, obsolescent on costal area and slightly excurved below vein 2; a fine waved blackish terminal line; cilia pinkish ochreous with slight waved fuscous medial line from vein 4 to tornus. Underside of fore wing fuscous brown, the costal area irrorated with grey, a slight greyish discoidal bar, postmedial line grey, a terminal pinkish ochreous band; hind wing fuscous brown irrorated with grey, a blackish discoidal bar, postmedial line whitish defined by fuscous on inner side, slightly curved and minutely waved, a terminal pinkish ochreous band.

Hab. Britain, Leech Coll.; France; Germany, Zeller & Leech Colls.; Austria; Hungary; Switzerland, Frey Coll.; Spain; Italy; Greece, Merlin Coll.; Balkan States; Russia; Armenia; Asia Minor, Pontus; Palestine; W. Turkestan, Turcomania. *Exp.* 70–80 millim.

Larva. Meyr. Brit. Lep. p. 129; Barrett, Lep. Brit. v. p. 242, pl. 216. f. 2.

Pale ochreous suffused and irrorated with dark brown; pale oblique subdorsal streaks; dorsal and subdorsal lines indistinct, pale, interrupted; 11th somite with a transverse black mark, pale-edged behind; head pale ochreous speckled with brown. Food-plants: *Salix*, *Rubus*, *Primula*, &c. 9–15.

2786. Mania muscivirens.

Mormo muscivirens, Butl. A. M. N. H. (5) i. p. 289 (1878); id. Ill. Het. B. M. ii. p. 37, pl. 32. f. 5.

Head and thorax dark red-brown slightly irrorated with greyish, the tegulæ with slight pale tips; tarsi and spurs ringed with ochreous; abdomen dark red-brown, the crests and ventral surface slightly irrorated with greyish. Fore wing fuscous brown strongly suffused with grey, the medial area black-brown except towards costa, the veins with slight grey streaks; a slight rufous and ochreous streak on inner margin except at base; subbasal line represented by grey striæ from costa and cell on diffused black patches, followed by a slight oblique grey line from subcostal nervure to vein 1, with some black irroration beyond it; antemedial line with two widely separated blackish bars from costa, then grey defined on each side at middle by some black scales and with diffused black patch before it on inner area, excurved below the cell and strongly bent inwards to inner margin; claviform large, dark brown slightly defined by black and extending to cell: orbicular defined by grey at sides, open above and below and constricted at middle; reniform angled inwards on median nervure,

with fine grey annulus slightly defined by black, open below, its centre defined by small black spots divided by the grey veins; medial line indistinct, dark, oblique from costa to lower angle of cell, then waved; postmedial line indistinctly double towards costa and with double black bars from costa, bent outwards below costa, then with series of double black points beyond it on the veins, incurved to above vein 4, oblique to vein 2 and slightly bent outwards to inner margin, some pale points beyond it on a brownish costal shade; the postmedial area with slight irregular line formed of black scales, oblique towards costa, excurved below vein 7, excurved and waved at middle; subterminal line grey, excurved at vein 7 and middle and bent outwards to tornus, some blackish suffusion beyond it at discal fold and between vein 3 and submedian fold; a terminal series of rather lunulate black spots; cilia rufous and dark brown with an ochreous line at base. Hind wing dark brown with a cupreous gloss; cilia ochreous with diffused red-brown line at middle; the underside slightly irrorated with greyish, a dark discoidal lunule and diffused curved postmedial line.

Hab. Japan, Nikko (*Pryer*), 1 ♀, Oiwake (*Pryer*), 1 ♀, Yokohama (*Jonas*, *Pryer*), 4 ♂; Corea, Gensan (*Leech*), 1 ♂. *Exp.* 64–68 millim.

2787. **Mania venata**, n. sp. (Plate CVIII. fig. 19.)

Head and thorax red-brown slightly mixed with greyish; fore tarsi with slight ochreous rings; abdomen greyish brown. Fore wing brown strongly suffused with silvery grey, the medial area black-brown except towards costa; the veins with fine grey streaks, the inner margin with slight rufous streak except at base; subbasal line represented by grey striæ from costa and cell on diffused black patches and with some black irroration beyond it; antemedial line with two black bars from costa, then grey slightly defined on each side by black, oblique to vein 1 and strongly bent inwards to inner margin, where there is some black suffusion before it; claviform large, dark brown slightly defined by black, extending to cell; orbicular and reniform with grey and brown centres defined by small blackish spots and fine pale grey annuli slightly defined by black, the former constricted at middle, the latter angled inwards on median nervure; a faint diffused blackish medial line, oblique from costa to lower angle of cell, then sinuous; postmedial line double, filled in with grey, bent outwards below costa, then with double series of black points beyond it on the veins, incurved to above vein 4 where it is angled outwards, then again incurved, some pale points beyond it on a brown costal shade; postmedial area with a slight minutely waved line formed of black scales, oblique towards costa, excurved at vein 5 and middle; subterminal line grey, excurved below vein 7 and at middle and bent outwards to tornus, some blackish suffusion beyond it at discal fold; a

terminal series of small lunulate black spots ; cilia rufous and dark brown with a fine ochreous line at base. Hind wing dark brown with a cupreous gloss ; cilia red-brown with a fine ochreous line at base ; the underside slightly irrorated with greyish, a dark discoidal spot and diffused curved postmedial line.

Hab. W. China, Omei-shan, 1 ♂, Nitou, 1 ♂ type, Wa-ssu-kow, 1 ♀. *Exp.* 54 millim.

2788. **Mania nyctichroa**, n. sp. (Plate CVIII. fig. 20.)

♀. Head and thorax pale red-brown mixed with some greyish ; fore tarsi with slight pale rings ; abdomen red-brown, the crests mixed with greyish, the ventral surface paler. Fore wing red-brown suffused with grey especially on ante- and postmedial areas and at apex, the veins with slight pale streaks ; subbasal line represented by grey striæ from costa and cell defined on each side by black and with some black irroration beyond it ; antemedial line grey defined on each side by a few black scales, bent outwards below costa, oblique to submedian fold and strongly bent inwards to inner margin ; claviform red-brown slightly defined by dark brown, extending to cell ; orbicular erect oblong, defined by grey at sides, open above and below ; reniform with grey annulus slightly defined by black, open below and angled inwards on median nervure, its centre defined by small black spots above and on outer side ; an indistinct sinuous brown line oblique from costa to lower angle of cell ; postmedial line indistinctly double towards costa, bent outwards below costa, then with double series of black points beyond it on the veins, incurved and closely approximated to reniform to above vein 4 where it is slightly angled outwards, then slightly incurved and sinuous, some pale points beyond it on a red-brown costal patch ; the postmedial area with slight minutely waved line of black scales, oblique towards costa, excurved at vein 7 and middle, the area beyond it redder brown to the grey subterminal line, excurved below vein 7 and at middle and bent outwards to tornus, some blackish suffusion beyond it at discal fold ; a terminal series of lunulate black spots ; cilia rufous and brown with a fine ochreous line at base. Hind wing red-brown, the cilia ochreous white with diffused red-brown line through them ; the underside suffused with greyish, a dark discoidal spot and diffused curved postmedial line.

Hab. C. China, Kiukiang (*Pratt*), 1 ♀ type ; W. China, Kwei-chow, 1 ♀. *Exp.* 54 millim.

2789. **Mania phæochroa**, n. sp. (Plate CVIII. fig. 21.)

♂. Head and thorax red-brown slightly mixed with grey ; fore and mid tibiæ and tarsi with faint greyish rings ; abdomen red-brown, the crests mixed with greyish. Fore wing brown strongly tinged with grey ; subbasal line represented by double black striæ from costa and cell ; antemedial line indistinctly double, curved,

waved, some black irroration before it on inner area; claviform dark brown slightly defined by blackish, extending to cell; orbicular and reniform with slight greyish annuli, open above, the former slightly constricted at middle, its centre slightly defined by blackish, the latter angled inwards on median nervure and with its centre defined by blackish points, the cell before and between them and the area just beyond the reniform tinged with dark brown; a blackish striga from costa to reniform, and waved line from cell to inner margin; postmedial line double at costa, then indistinct and with double series of black points beyond it on the veins, incurved at discal fold to near reniform, angled outwards at vein 5, then incurved and waved, some pale points beyond it on a darker brown costal patch; the postmedial area with faint line of black scales, oblique towards costa, then excurved and waved; a faint waved greyish subterminal line, angled outwards at vein 7 and excurved at middle, some blackish suffusion beyond it at discal fold; a terminal series of lunulate black spots; cilia red-brown mixed with greyish and black. Hind wing dark red-brown, the cilia chequered red-brown and ochreous, with a slight ochreous line at base; the underside irrorated with greyish, a slight dark discoidal lunule and diffused curved postmedial line.

Hab. W. China, Washan (*Pratt*), 2 ♂ type. *Exp.* 60 millim.

2790. **Mania olivescaria.** (Plate CVIII. fig. 22.)

Ancara olivescaria, Swinh. A. M. N. H. (6) xix. p. 167 (1897).

♂. Head, thorax, and abdomen olive-brown; palpi and legs with some fuscous mixed. Fore wing olive-brown irrorated with dark red-brown; subbasal line represented by double black striæ from costa and cell; antemedial line indistinctly double, curved, waved; claviform a black-brown patch; orbicular and reniform large, very indistinctly defined at sides by blackish, constricted at middle and almost confluent below, the latter with blackish mark beyond it; medial line represented by a striga from costa and indistinct dentate line from cell to inner margin; postmedial line double at costa, then very indistinct and represented by a series of slight black striæ with minute black and white streaks beyond them on the veins, slightly bent outwards below costa and incurved at discal fold and below vein 4; subterminal line very indistinct, defined on each side by slight dark marks, excurved below vein 7 and at middle; a terminal series of small black spots in the interspaces. Hind wing deep fuscous brown with slight olive-brown marks in the interspaces of terminal area between veins 2 and 1; cilia olive-brown with a dark line through them; the underside olive-brown irrorated with dark brown, a black discoidal spot and curved diffused postmedial line.

Hab. Assam (*Badgley*), 1 ♂, Jaintia Hills, 1 ♂ type. *Exp.* 56 millim.

Genus **MAGUSA.**

	Type.
Magusa, Wlk. xi. 762 (1857)	*orbifera.*
Sasunaga, Moore, P. Z. S. 1881, p. 342	*tenebrosa.*
Callixena, Saalm. Lep. Madag. p. 324 (1891)	*versicolora.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and smoothly scaled, the 3rd short, porrect; frons smooth, tufted with hair; eyes large, round; antennæ of male ciliated; thorax clothed chiefly with scales, and with slight double ridge-like crest; tibiæ moderately fringed with hair; fore coxæ of male tufted with hair; abdomen with dorsal crests on basal segments. Fore wing very long and narrow, the costa arched, the apex rounded, the termen evenly and very obliquely curved, hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the rather long areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base only.

A. Fore wing with wedge-shaped black patch below base of cell.
  a. Fore wing with the ground-colour olive-green ..... *olivaria.*
  b. Fore wing with the ground-colour rufous suffused with purple-brown ..... *œnistis.*
B. Fore wing with fine black streak below base of cell.
  a. Fore wing with the postmedial line distinct, white ..... *leucorina.*
  b. Fore wing with the postmedial line indistinct, black.
    a^1. Fore wing with the streak above extremity of vein 4 white and oblique ..... *versicolora.*
    b^1. Fore wing with the pale streak above extremity of vein 4 indistinct and longitudinal ..... *tenebrosa.*
C. Fore wing without black streak below base of cell ..... *orbifera.*

2791. **Magusa olivaria**, n. sp. (Plate CIX. fig. 7.)

♀. Head and thorax ochreous white tinged with rufous; palpi with some red-brown and black at sides; frons with red-brown and black lateral bars; tegulæ with white line near tips defined by black scales, some black on thorax behind them; pectus and legs whitish mixed with red-brown, the tibiæ and tarsi banded black and whitish; abdomen fuscous brown, the crests rufous and whitish, the ventral surface rufous. Fore wing olive-yellow, the costal half suffused with black to medial line and the terminal area suffused with black obliquely to below apex; an oblique whitish fascia from base of costa along vein 1 to antemedial line, with black patch above it at middle and black streak above inner margin before the antemedial line; subbasal line double, blackish, from costa to submedian fold; antemedial line double filled in with olive, oblique, waved, angled outwards below costa and inwards on vein 1; orbicular small, round, olive defined by black; reniform olive defined by black on inner side and by a few black scales on outer, a line of black scales in centre; an indistinct waved dark medial line; postmedial line double, prominently filled in with white, bent outwards below costa, then minutely waved, strongly incurved below vein 4, some white points beyond it on costa on a brownish patch with slight black streak below costa; subterminal line white, angled outwards at vein 7, acutely inwards at discal

fold and bent inwards below vein 4, the black before it on inner half rather forming streaks ; a terminal series of small black lunules defined on inner side by slight pale lunules ; cilia blackish with a slight pale line at base. Hind wing dark brown with a reddish tinge ; cilia whitish tinged with red-brown and with a dark line through them ; the underside dark brown, the costal area red irrorated with white and black, an indistinct dark discoidal spot and diffused curved postmedial line bent inwards to costa.

Hab. Malacca, Perak, Kinta Valley (*Ridley*), 1 ♀ type. *Exp.* 40 millim.

2792. **Magusa cœnistis**, n. sp. (Plate CIX. fig. 8.)

♀. Head and thorax bright rufous mixed with dark red-brown ; palpi ochreous white in front ; tegulæ with some white scales before the tips which are reddish ochreous ; patagia with some black scales near upper edges and a white mark on outer edge near base ; pectus white in front and below base of wings ; tarsi black with rufous rings ; abdomen red-brown with the crests rufous and greyish, the ventral surface deep rufous. Fore wing pale rufous suffused with red-brown and fuscous, the costal half to middle and a patch on costa beyond postmedial line darker brown, the outer part of medial area and submedian interspace to postmedial line and apex paler rufous ; an oblique sinuous white streak from base of costa to submedian fold before middle with a triangular black mark above its extremity ; subbasal line represented by double black striæ from costa and cell, the antemedial line by double black striæ from costa and indistinct double waved line from cell to inner margin ; claviform small, slightly defined by blackish ; orbicular small, round, with brown centre and rufous annulus, placed on a triangular black patch extending to reniform which is pale rufous defined by black, the inner side of centre slightly defined by brown, its outer edge indented at middle and with dark streak from it to postmedial line ; medial line represented by a black spot on costa and slight waved line from cell to inner margin ; postmedial line double filled in with reddish ochreous, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some white points beyond it on the dark costal patch and slight black streaks on veins 6 and 4 ; an indistinct pale subterminal line, angled outwards at vein 7 and excurved at middle ; a terminal series of small black spots on slight pale marks. Hind wing dark red-brown ; cilia greyish brown with a slight dark line through them ; the underside red-brown, the costal area rufous irrorated with brown, a brownish discoidal bar and diffused slightly curved postmedial line.

Hab. Br. N. Guinea, Ekeikei (*Pratt*), 1 ♀ type. *Exp.* 44 millim.

2793. **Magusa leucorina**, n. sp. (Plate CVIII. fig. 9.)

♂. Head and tegulæ whitish tinged with rufous, some fuscous on vertex of head and near tips of tegulæ; palpi with black patches at sides of joints; frons with lateral black bars; patagia grey mixed with brown, some rufous at base and some black scales near upper edge; vertex of thorax rufous; pectus purplish rufous, greyish at sides, the tibiæ and tarsi banded black and grey; abdomen fuscous brown, the crests, anal tuft and ventral surface rufous. Fore wing greyish suffused with olive, red-brown and fuscous; subbasal line represented by double blackish striæ from costa and cell, an oblique diffused fuscous band beyond it except towards costa; antemedial line double, oblique, dentate, bent inwards to inner margin; claviform slightly defined by black; the cell black on medial area with the small elliptical grey orbicular on it; reniform ill-defined, pale olive with its inner part tinged with brown, a small black spot on its upper edge, its outer edge produced to a point in discal fold and with two diffused black streaks beyond it; an indistinct sinuous medial line from cell to inner margin; postmedial line whitish defined on each side by black towards costa and below vein 3, bent outwards below costa, excurved to vein 4, then strongly incurved and with double series of black points beyond it, the area beyond it red-brown with oblique pale shade from apex to postmedial line at discal fold; subterminal line pale, defined on inner side by a black patch on costal area, angled outwards at vein 7, then oblique, waved, angled inwards to postmedial line in discal fold; a terminal series of brown lunules slightly defined by greyish; cilia red-brown with series of whitish spots at tips. Hind wing purplish red-brown, greyish at base; the cilia purple-brown at base, whitish at tips; the underside purplish red-brown, the basal half pale except on costal area which is slightly irrorated with whitish, an indistinct dark discoidal spot and diffused oblique sinuous postmedial line.

Hab. Br. N. Guinea, Avola (*Pratt*), 2 ♂ type. *Exp.* 36–42 millim.

2794. **Magusa versicolora.**

Callixena versicolora, Saalm. Lep. Madag. p. 325, f. 164 (1891).

♀. Head and thorax grey-white, the base of tegulæ with blackish patches on upper edge; legs tinged with brown, the tarsi blackish with pale rings; abdomen grey tinged with red-brown, the crests pale rufous. Fore wing fuscous brown with a reddish tinge, the inner area white irrorated with fuscous and tinged with rufous on medial area, its upper edge sinuous and on terminal area extending to vein 4 where there is an oblique white streak from subterminal line to termen; antemedial line very indistinct, very oblique from costa to submedian fold; orbicular small, round, with fuscous centre and greyish annulus defined by black; reniform slightly defined by black on inner side, otherwise hardly traceable; postmedial line very indistinct, double, strongly

bent outwards below costa, oblique to vein 2, then bent inwards and erect to inner margin, some whitish points beyond it on costa; the veins of terminal half and interspaces of terminal area with slight dark streaks; subterminal line represented by slight whitish points from costa to vein 5, then by a white line from the white streak to inner margin, incurved below vein 3, a darker brown patch before it on costa; the termen with series of pale red-brown lunules on the whitish area defined by white on inner side. Hind wing whitish tinged with brown, the veins and terminal area suffused with reddish brown, cilia white. Underside of fore wing suffused with fuscous, the terminal area white from apex to vein 3, the costa white irrorated with rufous to beyond middle; hind wing white with a subterminal dark shade from below vein 7 to vein 3.

Ab. 1. Fore wing with the costal area pale interrupted by the dark patch before subterminal line, a black streak below base of cell defined by white below.

Ab. 2. Fore wing wholly suffused with grey, the costal half tinged with pale brown except in end of cell and the dark patch before subterminal line, a black streak below base of cell defined by white below and a black streak from lower angle of cell to termen interrupted by the white oblique streak at middle of termen.

Hab. Gold Coast, Ashanti, Obuassi (*Bergman*), 1 ♀; Natal, Durban (*Leigh*), 1 ♀; C. Colony, Transkei (*Miss F. Barrett*), 2 ♀; Madagascar, Nossi Bé (*Saalmüller*), 1 ♀. *Exp.* 32–50 millim.

2795. Magusa tenebrosa. (Plate CIX. fig. 10.)

Hadena tenebrosa, Moore, P. Z. S. 1867, p. 59; Hmpsn. Moths Ind. ii. p. 226.

♂. Head and thorax red-brown mixed with black; palpi with black marks at sides of 2nd and 3rd joints; frons with lateral black bars; vertex of head with blackish patch; tegulæ with black lines at middle and near tips and whitish patch at middle of tips; patagia with black streak near upper edge angled outwards at middle; pectus whitish and rufous, bright rufous in front, the tarsi black banded with rufous; abdomen fuscous brown, the crests and extremity rufous, the genital tuft whitish, the ventral surface rufous. Fore wing pale red-brown suffused in parts with deep red-brown and slightly irrorated with fuscous, the veins of terminal half with slight black streak; subbasal line represented by double oblique dark striæ from costa and cell; antemedial line double, blackish, irregularly dentate, angled outwards below costa and in submedian fold; orbicular defined by black, round; reniform defined by a slight double black bar on inner side and streak above, hardly traceable and dentate on outer side; traces of a waved medial line; postmedial line very indistinct, double, strongly bent

outwards below costa, then dentate, strongly bent inwards below vein 3, some pale points beyond it on costa; subterminal line indistinct, pale, defined on inner side by dark suffusion on costal area and at middle, excurved at vein 7, excurved and waved at middle; a terminal series of small black spots; cilia with series of blackish points at middle and tips. Hind wing fuscous brown with a reddish gloss, the interspaces semihyaline at base; cilia brown at base, white at tips; the underside pale, the costal area rufous irrorated with whitish, the terminal area suffused with fuscous brown, a slight dark discordal lunule and indistinct diffused sinuous postmedial line.

♀. Fore wing with the costal half to postmedial line and the inner half of terminal area suffused with black.

Ab. 1, ♂. Fore wing with elongate white spot before the antemedial line in submedian fold and some white beyond the postmedial and subterminal lines in submedian interspace.

Ab. 2, ♀. Fore wing with diffused sinuous white streak in submedian interspace.

Ab. 3, ♂. Fore wing with broad diffused dark fascia from middle of wing in and below cell to termen below apex.

Ab. 4, ♀. Fore wing with the ground-colour pale olive.

Ab. 5, ♀. Similar but with white marks in submedian interspace before the antemedial and beyond the postmedial line.

Hab. Punjab, Simla (*Harford*), 1 ♂, Kangra, 2 ♂; Sikhim (*Lidderdale*), 2 ♀; Bombay, 1 ♀, Poona; Madras, Nilgiris (*Hampson*), 1 ♂, 3 ♀; Ceylon, Dickoya (*Green*), 2 ♂, 2 ♀, Trincomali (*Yerbury*), 2 ♀; Singapore (*Ridley*), 6 ♂, 1 ♀; Br. New Guinea, Ekeikei (*Pratt*), 1 ♂, 5 ♀; Queensland, Brisbane (*Turner*), 1 ♂. *Exp.* 38–50 millim.

2796. Magusa orbifera.

Xylina orbifera, Wlk. xi. 761 (1857).
Magusa strigifera, Wlk. xi. 763 (1857); Druce, Biol. Centr.-Am., Het. i. p. 297 & ii. p. 488.
Stictoptera divaricata, Grote, 6th Rep. Peab. Acad. Sci. p. 37 (1874); Smith, Cat. Noct. N. Am. p. 329.
Magusa discidens, Feld. Reis. Nov. pl. 108. f. 50 (1874).
Magusa sarpida, Feld. Reis. Nov. pl. 108. f. 51 (1874).
Laphygma angustipennis, Möschl. Abh. Senck. Ges. xiv. p. 43, f. 14 (1888).
Laphygma divida, Möschl. Abh. Senck. Ges. xvi. p. 124 (1890).

♂ (*divaricata*). Head and thorax rufous mixed with some dark brown; palpi whitish, fuscous at tips; sides of frons with dark points; tegulæ with dark medial patch; pro- and metathorax with paired black points; pectus and legs pale rufous, the tarsi banded with black; abdomen dark brown, the crests, anal tuft and ventral surface rufous. Fore wing red-brown suffused in parts with darker brown, the veins and the interspaces of terminal area with slight black streaks; subbasal line slight, double, black, excurved below

costa and ending at submedian fold; antemedial line indistinct, double, curved, angled outwards in submedian fold and above inner margin; orbicular and reniform defined by black, the former round, the latter somewhat constricted at middle; an oblique dark striga from costa to reniform and dark shade from lower angle of cell to inner margin; postmedial line indistinct, double filled in with greyish and defined by greyish on outer side towards inner margin, strongly bent outwards below costa, then dentate, incurved below

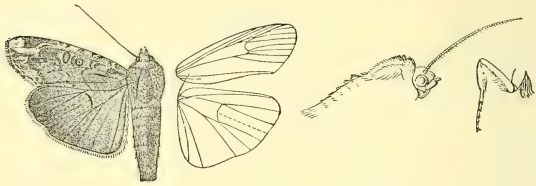


Fig. 12.—*Magusa orbifera*, ♂. ½.

vein 5, some pale points beyond it on costa; subterminal line indistinct, pale, defined on inner side by a blackish patch on costal area, angled outwards at vein 7, excurved at middle and bent outwards to tornus; a terminal series of slight blackish lunules defined by greyish on inner side; cilia with a slight dark line through them. Hind wing dark reddish brown, the interspaces of basal area slightly semihyaline; cilia whitish with a slight brown line near base; the underside with the interspaces greyish to beyond middle, the terminal area fuscous brown, the costal area slightly irrorated with greyish, an indistinct medial line from costa to lower angle of cell and postmedial line from costa to vein 4.

♀. Fore wing with the inner area grey below submedian fold, expanding beyond postmedial line to vein 3.

Ab. 1, ♂. Fore wing dark brown with some white in submedian interspace on antemedial, medial, and postmedial lines and on costal area on subterminal line.

Ab. 2, ♀. Fore wing with the inner area pale rufous, the costal half suffused with black.

Ab. 3, ♀ type. Fore wing with the inner area grey, the costal half rufous; the markings very indistinct.

Ab. 4. *strigifera*. Fore wing similar but the markings defined by grey.

Hab. U.S.A., New York, Wisconsin, 2 ♂, type *divaricata*, N. Indiana, 1 ♀, Florida, Texas, Arizona, Nogales (*Oslar*), 1 ♂, 3 ♀; Mexico City (*Hoeges*), 1 ♂, Jalapa (*Trujillo*), 3 ♂, 3 ♀, Durango (*Becker*), 2 ♀; Costa Rica, Candelaria Mts. (*Underwood*), 1 ♂, 2 ♀; Guatemala (*Rodriguez*), 1 ♀, Godman-Salvin Coll.; Bahamas (*Bonhote*), 1 ♂; Jamaica; Haiti (*Tweedie*), 2 ♀, type

and type *strigifera*; Porto Rico; Colombia, Bogotá; Venezuela, 1 ♂, 5 ♀; Brazil, Amazons, R. Jurua (*Trail*), 1 ♂, R. Solimoes (*Trail*), 2 ♂, Coary (*Trail*), 1 ♀; Argentina (*Thomas*), 1 ♀. *Exp.* 36–48 millim.

Larva. Dyar, Proc. Ent. Soc. Wash. iv. p. 453.

Whitish green, the lines white or yellowish white; warts black with obscure pale rings; large blotches above tubercles ii., iii., iv., and vi. tinged with yellow; some faint white mottling between the lines, more distinct subventrally; setæ distinct, black. Food-plant: *Condalia ferrea.*

Genus **STENOPTERYGIA**, nov.

Type, *S. subcurva.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching vertex of head and moderately scaled, the 3rd short, porrect; frons smooth; eyes large, rounded; antennæ of male ciliated; head and thorax clothed chiefly with scales, the vertex of thorax with broad ridge-like crest; tibiæ moderately scaled; abdomen with dorsal crests on basal segments. Fore wing short and narrow, the apex rounded, the termen evenly curved and somewhat excised towards tornus, the inner margin lobed near base and with slight scale-tooth at tornus; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of disco-cellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the orbicular and reniform with whitish annuli defined by black ..... *tenebrosa.*
B. Fore wing with the orbicular and reniform indistinctly defined.
  a. Hind wing with the basal half whitish ..... *subcurva.*
  b. Hind wing wholly suffused with brown ..... *cebeæ.*

2797. **Stenopterygia tenebrosa**, n sp. (Plate CIX. fig. 11.)

♂. Head and base of tegulæ ochreous mixed with black-brown; thorax black-brown with a few ochreous scales; palpi black at sides, pale in front; frons with lateral black bars; pectus and legs ochreous irrorated with brown, the tarsi slightly banded with black; abdomen ochreous dorsally suffused with brown, the crests and anal tuft blackish. Fore wing red-brown mostly suffused with black-brown; subbasal line represented by two black striæ from costa filled in with ochreous; a blackish patch above inner margin before the antemedial line, which is double at costa filled in with ochreous, then rather oblique, waved; claviform slightly defined by black; orbicular and reniform with brown centres and slight greyish annuli defined by black, the former rounded, the latter rather constricted at middle; postmedial line double at costa filled in with ochreous, bent outwards below costa, then dentate, at vein 3 bent inwards to below angle of cell, some ochreous points beyond it on costa; subterminal line represented by some pale

points defined on inner side by black-brown suffusion, excurved below vein 7 and at middle and bent inwards at vein 3; a terminal series of minute white points; cilia black-brown. Hind wing whitish suffused with fuscous brown, especially on terminal area, the veins dark; cilia whitish chequered with brown; the underside whitish irrorated with brown, the terminal area suffused with brown, a slight discoidal spot.

Hab. Madras, Godavari Distr., Rajamahendri (*Bird*), 1 ♂ type. *Exp.* 28 millim.

2798. Stenopterygia subcurva.

Hadena subcurva, Wlk. xi. 592 (1857); Hmpsn. Moths Ind. ii. p. 212.
Hadena postica, Wlk. xi. 594 (1857).
Xylina calida, Wlk. Journ. Linn. Soc., Zool. vi. p. 195 (1862).
Dipterygia sikkima, Moore, Lep. Atk. p. 105 (1882); Hmpsn. Moths Ind. ii. p. 236.
Opigena monostigma, Saalm. Lep. Madag. p. 287, f. 104 (1891).

Head and thorax red-brown suffused with fuscous; palpi whitish in front; tegulæ with blackish medial line; pectus and legs pale rufous; abdomen grey-brown, the dorsal crests rufous, the ventral surface pale rufous. Fore wing red-brown suffused in parts with

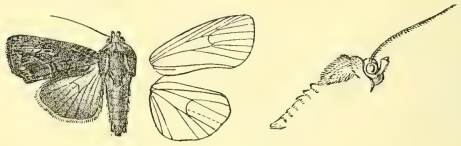


Fig. 13.—*Stenopterygia subcurva*, ♂. ½.

dark leaden grey, the postmedial area rather redder from costa to vein 5; subbasal line double at costa, then oblique, waved, ending at vein 1; a black streak above inner margin before the antemedial line which is double at costa, then oblique, waved; claviform slightly defined by black; orbicular very small and indistinct, with faint reddish annulus, round; reniform with slight reddish annulus; an indistinct medial line, oblique from costa to median nervure; postmedial line indistinctly double towards costa, bent outwards below costa, oblique to vein 5, then strongly incurved; subterminal line represented by minute reddish spots with slight black streaks before them, the streak above vein 4 extending to reniform and above vein 2 to near postmedial line, some slight black streaks beyond it in the interspaces. Hind wing whitish tinged with brown, the veins and terminal half brown; cilia white, brown at apex and middle and with slight brown line through them; the

underside white, the costal area irrorated with brown, a brown discoidal lunule and sinuous curved postmedial line with the area beyond it brown.

Ab. 1. *sikhima*. Fore wing with some white irroration beyond postmedial line in submedian interspace.

Ab. 2. *monostigma*. Fore wing with prominent white patch beyond postmedial line in submedian interspace.

Hab. Natal, Malvern (*Millar*), 1 ♀; Madagascar; Sikhim, type † *sikkima* in Coll. Staudinger; Madras, Calicut (*Fellows-Wilson*), 1 ♂; Ceylon (*Wenham, Templeton, Green*), 7 ♂, 4 ♀, type and type *postica*; Borneo. *Exp.* 32–34 millim.

Larva. Hmpsn. J. Bomb. Nat. Hist. Soc. xiv. p. 200.

Black with irregular dorsal and lateral grey patches streaked with black; head red; some orange on 1st somite; stigmata white; a large irregular dorsal orange patch on terminal somite.

*2799. Stenopterygia cebeæ. (Plate CXIII. fig. 27.)

Alibama kebeæ, Beth.-Baker, Nov. Zool. xiii. p. 221 (1906).

♂. Head and thorax red-brown mixed with ochreous and greyish; palpi darker except at tips; frons with lateral black bars, the lower part yellow; tegulæ with diffused deep brown medial band; metathorax ochreous; pectus ochreous; tarsi blackish with pale rings; abdomen grey-brown, the crests rufous, the anal tuft and ventral surface ochreous tinged with rufous. Fore wing red-brown tinged with grey and irrorated with black; subbasal line double, waved, from costa to submedian fold, with red-brown patch beyond it on costa; antemedial line indistinctly double, oblique, irregularly dentate, with oblique black streak before it above inner margin; medial area suffused with dark brown below the cell; orbicular and reniform indistinctly defined by black, the former oblique elliptical, the latter somewhat constricted at middle, with some dark points in centre and white points on outer edge, the veins beyond it with slight black streaks; an indistinct brown mark on middle of costa and incurved shade from lower angle of cell to inner margin; postmedial line double, the outer line indistinct, bent outwards below costa, then dentate, rather oblique to vein 2, then strongly incurved, some whitish points beyond it on costa and the veins with slight black streaks; subterminal line formed of whitish striæ defined on inner side by blackish and with black streaks before and beyond it in the interspaces, somewhat excurved below vein 7 and at middle; a terminal series of small black lunules. Hind wing uniform dark red-brown; cilia whitish with a brown line through them; the underside brown, the costal area irrorated with white especially towards base, the inner area whitish.

Hab. Br. New Guinea, Mt. Kebea (*Pratt*), type † ♂ in Coll. Bethune-Baker. *Exp.* 32 millim.

Genus **DIPTERYGIA.**

Type.
Dipterygia, Steph. Ill. Brit. Ent., Haust. ii. p. 167 (1829) ... *scabriuscula.*

Proboscis fully developed; palpi upturned, the 2nd joint not reaching vertex of head and moderately scaled, the 3rd moderate; frons smooth; eyes large, rounded; antennæ of male ciliated; head and thorax clothed chiefly with scales, the thorax with double ridge-like crest; tibiæ fringed with hair; abdomen with dorsal series of crests, the crest on 2nd segment large. Fore wing rather short and broad, the apex rounded, the termen crenulate and excised towards tornus; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Thorax and mid femora of male with thick tufts of blackish hair.

A. Patagia and fore wing suffused with leaden fuscous ..... *cebeæ.*
B. Patagia and fore wing not suffused with leaden fuscous ..... *babooni.*

2800. Dipterygia cebeæ.

Dipterygia kebeæ, Beth.-Baker, Nov. Zool. xiii. p. 197 (1906).

Head white mixed with brown; sides of frons with black bars; tegulæ white, brown and black mixed with slight medial dark line; patagia black mixed with brown; thorax white mixed with brown; pectus whitish tinged with purplish; legs ochreous white and fuscous mixed, the tarsi with pale rings; abdomen fuscous mixed

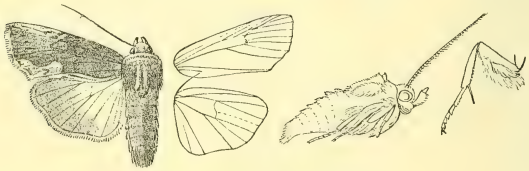


Fig. 14.—*Dipterygia cebeæ*, ♂. ½.

with grey, the anal tuft black in male, ochreous in female, the ventral surface whitish mixed with brown. Fore wing brown suffused with leaden fuscous; the costal area brownish at base, white and brown towards apex; a brown-irrorated white fascia on inner margin from near base and a patch beyond the postmedial line below vein 2 curving upwards to termen at vein 3; subbasal line represented by a slight oblique striga from costa, the antemedial line by two slight striæ from costa and a long tooth above inner margin, with black streak before it above the whitish fascia; claviform faintly defined by black at extremity; orbicular and reniform very indistinctly defined by black, the former small, round, the latter with some whitish on upper edge; postmedial line indistinct, oblique from costa to vein 6, excurved to vein 4, then strongly incurved and angled outwards on vein 1, a curved

black fascia from it to termen above the whitish patch and some white points on costa; faint traces of a subterminal line defined on inner side by slight dentate black marks on the dark area and on outer by slight dark streaks in the interspaces, somewhat angled outwards at vein 7 and excurved at middle; a terminal series of slight black lunules; cilia fuscous on apical half, white and brown towards tornus. Hind wing white, the costal and terminal areas fuscous, the latter very broad towards apex, narrowing somewhat to tornus; cilia brown with a slight pale line at base to vein 2, then mostly white; the underside with the costal area irrorated with brown, the terminal area suffused with brown.

Hab. Br. New Guinea, Babooni (*Pratt*), 2 ♂, 1 ♀, Mt. Kebea (*Pratt*), 1 ♀. *Exp.* 46 millim. Type † in Coll. Bethune-Baker.

2801. **Dipterygia babooni.** (Plate CIX. fig. 12.)

Dipterygia babooni, Beth.-Baker, Nov. Zool. xiii. p. 197 (1906).

Head and thorax white mixed with red-brown and fuscous, frons with lateral black bars; tegulæ with black medial line; patagia with black streak near upper edge; pectus and femora with purplish hair in male, the tufts from thorax and mid femora blackish; legs reddish brown and white, the tarsi with blackish bands; abdomen fuscous black, more or less mixed with brown in female, the dorsal crests brown, the ventral surface purplish red with the extremity black in male, in female whitish irrorated with rufous and black. Fore wing whitish more or less completely suffused with rufous, the veins with fine dark streaks; subbasal line represented by two slight oblique striæ from costa; an oblique black streak above inner margin before the antemedial line, which is very indistinctly double, dentate, strongly angled inwards on vein 1 and outwards above inner margin almost to postmedial line; claviform slightly defined by black at extremity; orbicular and reniform defined by blackish, the former round, the latter with some white on outer edge; traces of a diffused medial line towards costa; postmedial line indistinct, oblique from costa to vein 5, then strongly incurved; a downcurved black-brown fascia from it to termen above vein 3, expanding towards the postmedial line, some white points on costa towards apex; traces of a pale subterminal line defined on inner side near middle by slight dentate dark marks, somewhat angled outwards at vein 7 and excurved at middle, then incurved; a terminal series of slight black lunules; cilia fuscous intersected with whitish. Hind wing white, the costal and terminal areas suffused with fuscous, the former very broadly toward apex, narrowing somewhat to tornus; cilia fuscous with a slight pale line at base, whitish towards tornus; the underside with the costal area irrorated with brown, the terminal area suffused with fuscous to submedian fold.

Hab. Br. New Guinea, Mt. Kebea (*Pratt*), 1 ♂, 3 ♀, Ekeikei (*Pratt*), 2 ♀. *Exp.* 42–48 millim. Type † in Coll. Bethune-Baker.

Sect. II. Thorax and mid femora of male without tufts of hair.

A. Fore wing with whitish patch on tornal area extending to postmedial line.

a. Fore wing with the postmedial line incurved below vein 4.

a[1]. Fore wing with the postmedial line strongly excurved at vein 2 ..... *scabriuscula.*

b[1]. Fore wing with the postmedial line angled outwards just below vein 2 ..... *caliginosa.*

c[1]. Fore wing with the postmedial line not excurved or angled outwards near vein 2.

a[2]. Fore wing with the postmedial line strongly incurved below vein 4 and slightly angled outwards at vein 1.

a[3]. Fore wing with the postmedial line touching the angle of antemedial line above inner margin ... *japonica.*

b[3]. Fore wing with the postmedial line separate from the antemedial line above inner margin.

a[4]. Fore wing with the ground-colour black ..... *indica.*

b[4]. Fore wing brown, more or less suffused with black ..... *vagivitta.*

b[2]. Fore wing with the postmedial line much less incurved below vein 4, and not angled outwards at vein 1 ..... *cristifera.*

b. Fore wing with the postmedial line excurved to vein 3 and angled outwards on vein 2 to near termen ..... *umbrifera.*

B. Fore wing without whitish patch on tornal area extending to postmedial line.

a. Fore wing with pale and dark streaks in interspaces of terminal area.

a[1]. Fore wing grey suffused with fuscous ..... *patina.*

b[1]. Fore wing suffused with red-brown.

a[2]. Hind wing yellowish white, the terminal area suffused with rufous ..... *pallida.*

b[2]. Hind wing whitish tinged with brown, the veins and terminal area brown.

a[3]. Fore wing with veins 6, 4, 3 not defined by whitish streaks..... *ordinaria.*

b[3]. Fore wing with veins 6, 4, 3 defined by whitish streaks ..... *lignaris.*

c[2]. Hind wing wholly red-brown ..... *assueta.*

b. Fore wing without pale and dark streaks in interspaces of terminal area ..... *nicea.*

2802. Dipterygia scabriuscula.

Noctua scabriuscula, Linn. Syst. Nat. ed. x. p. 516 (1758); Clerck, Icones, pl. 1. f. 8; Staud. Cat. Lep. pal. p. 182; Smith, Cat. Noct. N. Am. p. 155.

Noctua pinastri, Linn. Faun. Suec. p. 315 (1761); Hübn. Eur. Schmett., Noct. f. 246; Dup. Lép. Fr. vii. p. 152, pl. 110. f. 5; Steph. Ill. Brit. Ent., Haust. ii. p. 168.

Noctua tripterygia, Esp. Schmett. iv. pl. 107. f. 4 (1787).

Head, tegulæ, and patagia fuscous black; thorax greyish ochreous mixed with brown; pectus grey and fuscous; legs black, the tarsi ringed with white; abdomen grey mixed with fuscous, the dorsal crests darker. Fore wing fuscous black, slightly mixed with brown, the inner margin and area beyond the postmedial line red-brown, irrorated with white between veins 6, 5 and below 4; subbasal

line represented by a black striga from costa; a black streak below base of cell; antemedial line dentate, strongly angled inwards on vein 1 and to or to near postmedial line above inner margin, a black streak before it above inner margin; claviform moderate, defined by black; orbicular and reniform defined by black, the former oblique elliptical, sometimes produced at lower extremity to the latter which is angled inwards on median nervure; postmedial line bent outwards below costa, then oblique and slightly sinuous to vein 5, then inwardly oblique and strongly sinuous, some pale points beyond it on costa, the veins beyond it defined by slight white streaks on the brown areas, the interspaces of terminal area with black streaks; subterminal line obsolete except below vein 2, white, angled outwards on vein 1, then retracted; cilia intersected with whitish. Hind wing ochreous whitish suffused

Fig. 15.—*Dipterygia scabriuscula*, ♂. ½.

with fuscous brown especially on terminal area; a fine dark terminal line; cilia whitish with a brown line through them; the underside whitish thickly irrorated with brown, a small discoidal lunule and traces of diffused postmedial and subterminal lines.

Hab. Canada; U.S.A., Northern, Eastern and Central States, 1 ♂, 1 ♀, Kansas (*Snow*), 1 ♂, 1 ♀, Texas, Colorado; Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland; N. Italy; Balkan States; Scandinavia; Russia, Livonia, Zeller Coll., Sarepta, Leech Coll.; Armenia; Asia Minor, Pontus; ? E. Siberia, Amurland, Ussuri. *Exp.* 35–44 millim.

Larva. Meyr. Brit. Lep. p. 129; Barrett, Lep. Brit. v. p. 32, pl. 188. f. 3. Reddish brown; dorsal line ochreous white, dark-edged; subdorsal line obscurely pale, dark-edged; spiracular line broad, whitish, dark-edged above; head brown. Food-plants: *Rumex* and *Polygonum*. 7–8.

2803. **Dipterygia caliginosa.** (Plate CIX. fig. 13.)

Hadena caliginosa, Wlk. xv. 1729 (1858).

Head, tegulæ, and patagia black with a few white scales, the last with brown upper edge; thorax reddish brown mixed with grey; tarsi with pale rings; abdomen fuscous mixed with greyish. Fore wing fuscous black with a leaden gloss and irrorated with a few white scales; the inner margin with brownish fascia from near

base; the area beyond the postmedial line brownish above and below vein 5 and below vein 4; subbasal line represented by black striæ from costa and cell; a black streak in base of submedian fold and an oblique streak above inner margin before the antemedial line, which is dentate, strongly angled inwards on vein 1 and outwards above inner margin, sometimes to postmedial line; claviform large, defined by black; orbicular and reniform large, defined by black and with very slight brown annuli, the former rounded or produced at lower extremity, the latter extending to well below cell and somewhat angled inwards on median nervure, usually with some rufous in and beyond its outer side; postmedial line slightly defined by brown on outer side, bent outwards below costa, then oblique and minutely dentate to vein 5, excurved to vein 4, then incurved and angled outwards in submedian fold, some whitish points beyond it on costa; subterminal line slight, whitish, angled outwards between veins 7 and 5, dentate to termen at vein 4, then dentate and oblique, the interspaces of terminal area with black streaks, at middle usually extending to before postmedial line; cilia with brownish points at base. Hind wing fuscous brown; cilia with a slight grey line at base; the underside grey, irrorated and suffused with fuscous, a black discoidal lunule and curved postmedial line.

Hab. Japan, Hakodaté (*Andrews*), 1 ♂, 1 ♀, Oiwake (*Pryer*), 1 ♂, 1 ♀, Tokio (*Fenton*), 1 ♂, 1 ♀, Yokohama (*Pryer*), 1 ♀, Usui Pass (*Lewis*), 1 ♂; N. China (*Fortune*), 1 ♂ type; W. China, Chang Yang (*Pratt*), 1 ♂, Washan (*Pratt*), 1 ♀, Chow-pin-sa, 1 ♀, Kwei-chow, 1 ♀, Wa-ssu-kou, 2 ♀, Pu-tsu-fang, 1 ♂, Nitou, 1 ♀, Chia-kou-ho (*Pratt*), 1 ♂, Ta-chien-lu (*Pratt*), 1 ♂. *Exp.* 42–54 millim.

2804. **Dipterygia japonica.** (Plate CIX. fig. 14.)

Dipterygia japonica, Leech, P. Z. S. 1889, p. 489, pl. l. f. 9.

♀. Head, tegulæ, and patagia fuscous black with a few white scales; thorax whitish tinged with brown; pectus and legs grey mixed with brown, the tarsi fuscous with pale rings; abdomen brown mixed with grey. Fore wing fuscous black; a white fascia on inner margin irrorated with brown and the area beyond postmedial line below vein 1 white irrorated with brown, at termen extending to vein 3; subbasal line represented by slight oblique striæ from costa and cell; an oblique black streak above the fascia on inner margin before the antemedial line, which is dentate, angled inwards on vein 1 and outwards above inner margin to near the postmedial line; claviform faintly defined by black; orbicular and reniform slightly defined by black and with a few white scales representing their annuli, the former oblique elliptical; postmedial line indistinct, bent outwards below costa, then sinuous, excurved to vein 5, then very obliquely incurved and angled outwards on vein 1, some white points beyond it on costa; the interspaces of terminal area with black streaks on the dark area, the

streak above vein 5 extending to reniform, with a series of subterminal white points on them; cilia fuscous with series of white points at base down to vein 3, then white mixed with fuscous. Hind wing whitish tinged with brown, darker on terminal area; cilia white with a brown line through them; the underside whitish irrorated with brown, a dark discoidal lunule and fine dark terminal line.

Hab. Japan, Yokohama (*Pryer*), 1 ♂ type. *Exp.* 42 millim.

2805. Dipterygia indica. (Plate CIX. fig. 15.)

Dipterygia indica, Moore, P. Z. S. 1867, p. 51; Hmpsn. Moths Ind. ii. p. 236.

Dipterygia nocturna, Hmpsn. Ill. Het. B. M. viii. p. 78, pl. 145. f. 19 (1891).

♀. Head, tegulæ, and patagia fuscous black mixed with grey; thorax grey-white mixed with some fuscous; palpi and frons ochreous mixed with purplish red, the latter with lateral black bars; pectus ochreous tinged with red in front; legs brown mixed with red and ochreous, the tarsi with pale rings; abdomen fuscous mixed with grey. Fore wing brown more or less completely suffused with purplish fuscous and irrorated wtih a few white scales; a whitish fascia irrorated with brown on inner margin from near base and the area beyond postmedial line whitish irrorated with brown below vein 2, at termen extending to vein 3; subbasal line represented by a faint oblique black striga from costa; antemedial line indistinct, black, dentate, angled inwards on vein 1 and strongly outwards above inner margin; claviform absent; orbicular and reniform very faintly defined by black, the former small, irregular, the latter with some white scales representing its annulus; postmedial line black, dentate, oblique from costa to vein 6, excurved to vein 4, then incurved and angled outwards on vein 1, some white points beyond it on costa; the terminal area with black streaks in the interspaces on the dark area, the streak above vein 5 extending to reniform with a series of slight white subterminal points on them; cilia with a series of white points at base. Hind wing fuscous brown, the cilia with a fine white line at base and white tips; the underside brown, the costal area and veins irrorated with white, a slight dark discoidal lunule and indistinct curved postmedial line.

Hab. Sikhim (*Dudgeon*), 3 ♀ type; Madras, Nilgiris (*Hampson*), 2 ♀ type *nocturna*. *Exp.* 38–44 millim.

2806. Dipterygia vagivitta. (Plate CIX. fig. 16.)

Dipterygia vagivitta, Wlk. Journ. Linn. Soc., Zool. vi. p. 185 (1862).

Head and tegulæ red-brown mixed with white; patagia red-brown; thorax white mixed with red-brown; tarsi fuscous with pale rings; abdomen greyish suffused with brown. Fore wing pale glossy reddish brown slightly suffused with purplish fuscous except

towards costa; a greyish fascia on inner margin from near base, the area beyond the postmedial line grey below vein 2, at termen extending to vein 3 and with a rufous fascia below vein 2; subbasal line represented by a faint oblique striga from costa; antemedial line indistinct, blackish, dentate, angled inwards on vein 1 and strongly outwards above inner margin; claviform absent; orbicular and reniform indistinctly defined by black and with some white scales representing their annuli, the former irregularly rounded; postmedial line blackish, minutely dentate, oblique from costa to vein 6, excurved to vein 4, then incurved and slightly angled outwards on vein 1, some white points beyond it on costa; a faint pale subterminal line excurved at middle, with a series of black streaks before it in the interspaces on dark area, the streak above vein 5 extending to reniform and the streak above 3 to termen; a terminal series of black points; cilia fuscous intersected with whitish towards apex, mostly whitish towards tornus. Hind wing fuscous brown, the base rather paler; cilia white with a brown line through them; the underside white, the costal and terminal areas irrorated with brown, a slight discoidal spot and traces of curved postmedial line.

Hab. Borneo, Sarawak (*Wallace*), 4 ♂, Bidi (*Shelford*), 1 ♂. *Exp.* 32–40 millim.

Subsp. 1. Fore wing blacker, the patch beyond postmedial line suffused with brown.

Hab. Christmas I. (*Andrews*), 2 ♀.

2807. Dipterygia cristifera.

Dipterygia cristifera, Hmpsn. Ill. Het. B.M. ix. p. 94, pl. 162. f. 7 (1893); id. Moths Ind. ii. p. 235.

Head, tegulæ, and patagia fuscous mixed with grey; thorax reddish brown; palpi in front and lower part of frons white, the latter with black lateral bars; pectus purplish in front; legs fuscous mixed with grey, the tarsi ringed with white; abdomen fuscous brown mixed with grey, the crests rufous and grey. Fore wing grey-brown suffused with purplish fuscous except on costa towards apex; a greyish fascia on inner margin from near base and patch beyond postmedial line below vein 2, at termen extending to vein 3; subbasal line represented by a slight striga from costa; traces of a black streak below base of cell; a black streak above inner margin before the antemedial line, which is very indistinct and minutely waved from costa to vein 1, then strongly angled outwards above inner margin; claviform faintly defined by brown; orbicular and reniform incompletely defined by black and with yellowish scales representing their annuli; postmedial line black, bent outwards below costa, minutely dentate and excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line yellowish, maculate with short black streaks in the interspaces before and beyond it, the streak above vein 2 strong and extending

to postmedial line, somewhat excurved below vein 7 and at middle; a terminal series of black points defined by yellowish on inner side. Hind wing fuscous brown; cilia whitish with a dark line near base; the underside whitish, the costal and terminal areas irrorated with brown, a slight discoidal spot and curved postmedial line.

Hab. Ceylon, Peradeniya (*Green*), 1 ♂, 1 ♀ type. *Exp.* 42 millim.

2808. Dipterygia umbrifera.

Hyboma umbrifera, Butl. Ill. Het. B. M. vii. p. 46, pl. 126. f. 1 (1889); Hmpsn. Moths Ind. ii. p. 236.

♀. Head and thorax grey mixed with dark brown; abdomen grey, the crests very large and mixed with brown. Fore wing grey irrorated with brown, the basal area and the inner area to postmedial line dark brown; subbasal line represented by a very oblique black striga from costa and an erect striga defined by whitish on outer side from median nervure; antemedial line indistinct, blackish, defined by grey on inner side, slightly excurved from costa to vein 1, then strongly bent outwards to inner margin; claviform represented by a slight black streak; a diffused blackish fascia on vein 1 from ante- to postmedial line; orbicular and reniform large with whitish annuli slightly defined by brown, the former round, the latter constricted at middle; a rather diffused oblique black bar from middle of costa to reniform; postmedial line black defined by whitish on outer side, very strongly bent outwards from just below costa to vein 3, angled outwards on vein 2 to near termen, then bent inwards and erect to inner margin, with black streaks from it to termen below veins 4 and 2; subterminal line represented by an oblique dark striga from costa and a slight pale line from submedian fold to inner margin. Hind wing greyish suffused with pale brown; cilia with a whitish line at base; the underside whitish irrorated with brown, an oblique blackish discoidal lunule and crenulate postmedial line.

Hab. Punjab, Dharmsála (*Hocking*), 1 ♀ type. *Exp.* 34 millim.

2809. Dipterygia patina. (Plate CIX. fig. 17.)

Hadena patina, Harv. Bull. Buff. Soc. Nat. Sci. iii. p. 7 (1875); Smith, Cat. Noct. N. Am. p. 146.
Dipterygia minorata, Barnes, Can. Ent. xxxix. p. 13 (1907).

♂. Head and thorax fuscous black mixed with grey, frons with lateral black bars; tegulæ with medial black line; tarsi banded black and grey; abdomen grey tinged with fuscous towards extremity, the dorsal crests blackish, the ventral surface whitish with series of black spots. Fore wing grey suffused with fuscous, the median nervure and veins 3, 4 streaked with black and defined by slight white streaks; subbasal line represented by a slight oblique striga from costa; antemedial line indistinctly double, dentate, angled inwards on vein 1 and outwards above inner margin;

claviform short, slightly defined by black; orbicular and reniform with interrupted whitish annuli partially defined by black, the former rounded; traces of a medial line oblique from costa to median nervure, then waved; postmedial line indistinctly double, bent outwards below costa, then minutely dentate and produced to black and white points on the veins, incurved below vein 4, some pale points beyond it on costa; the postmedial area paler between veins 6 and 2 and at inner margin; subterminal line whitish, angled outwards at vein 7, excurved at middle, then oblique; the terminal area with slight black streaks in the interspaces, with a series of slight white points on them just before termen; the tornus obliquely truncate; cilia fuscous mixed with grey. Hind wing whitish tinged with fuscous brown, the veins and terminal area darker; cilia white with series of dark marks from apex to vein 2; the underside white, the costal and terminal areas irrorated with brown, a discoidal point and crenulate postmedial line.

♀. Metathorax brownish; fore wing darker with greyish fascia on inner margin from near base and pale patch beyond postmedial line below submedian fold.

Hab. U.S.A., District of Columbia, Texas, 1 ♂, 1 ♀ type, Kerrville, Arizona, Sta. Catalina Mts. *Exp.* 36–40 millim.

2810. **Dipterygia pallida.** (Plate CIX. fig. 18.)

Dipterygia pallida, Dogn. Ann. Soc. Ent. Belg. li. p. 235 (1907).

♂. Head and thorax fuscous mixed with grey; palpi rufous with black bands at extremities of 2nd and 3rd joints; tegulæ rufous at base and with black medial line; patagia pale grey; pectus and legs rufous, the tarsi fuscous with pale rings; abdomen yellowish tinged with rufous, the dorsal crests fuscous and grey. Fore wing pale grey suffused with rufous especially on costal area, the veins with fine dark streaks defined on each side by slight whitish streaks, the interspaces of terminal area with slight rufous streaks; subbasal line represented by slight double oblique rufous striæ from costa; a fine oblique dark streak above inner margin before the antemedial line, which is represented by double oblique dark striæ from costa and a fine line very strongly angled outwards in submedian fold and above inner margin and inwards on vein 1 and to inner margin; orbicular and reniform very faintly and incompletely defined by whitish, the former round, the latter with slight blackish streak in middle; postmedial line double at costa, strongly bent outwards below costa, excurved to vein 7, then reduced to a double series of points on the veins, below vein 2 indistinctly double filled in with whitish, slightly angled inwards in submedian fold and outwards on vein 1, then incurved, a fuscous patch beyond it in submedian fold and the costal area fuscous with pale points on costa; faint traces of a brownish subterminal line in places; a terminal series of black points and a triangular fuscous patch from below vein 3 to submedian fold meeting the patch beyond post-

medial line; cilia chequered rufous and blackish, mostly blackish towards tornus. Hind wing yellowish white, the inner margin tinged with rufous, the termen suffused with rufous and with brown striæ on termen from apex to submedian fold; cilia white tinged with rufous in parts; the underside with the costa and termen to vein 2 tinged with rufous, a slight discoidal point.

Hab. Paraguay (*Pouillon*), type † ♂ in Coll. Dognin. *Exp.* 32 millim.

2811. Dipterygia ordinaria.

Prometopus ordinarius, Butl. Trans. Ent. Soc. 1879, p. 21 ("♂").
Perigea berinda, Druce, Biol. Centr.-Am., Het. i. p. 278 (part).
Prometopus ordinarius, Druce, Biol. Centr.-Am., Het. ii. p. 509, pl. 96. f. 20 (1898).

Head and thorax red-brown mixed with fuscous, the dorsum of thorax rufous; palpi whitish tinged with red in front and at tips, the 3rd joint with small black spot; frons with the lower part whitish and with lateral black bars; pectus ochreous and rufous; tibiæ irrorated with brown, the tarsi black ringed with ochreous; abdomen fuscous, the dorsal crests and anal tuft rufous, the ventral surface ochreous tinged with rufous, a sublateral series of black striæ and ventral series of small spots. Fore wing red-brown suffused in part with purplish fuscous except on postmedial area, a rufous fascia on inner margin from near base, the veins with slight dark streaks, the veins arising from end of cell slightly defined on both sides by greyish, a diffused black fascia in submedian fold from antemedial to subterminal line; subbasal line represented by two oblique striæ from costa filled in with rufous; traces of a dark streak in base of submedian fold; an oblique black streak above inner margin before the antemedial line, which is indistinctly double filled in with rufous, oblique, dentate; claviform large, indistinctly defined by black; orbicular and reniform with incomplete grey annuli slightly defined by black, the former rather oblique elliptical, the latter with some white points on its outer edge; medial line represented by slight striæ from costa and inner margin; postmedial line defined on outer side by rufous, double towards costa, bent outwards below costa, then minutely dentate, excurved to vein 4, then incurved, defined on each side by white between vein 2 and submedian fold, some pale points beyond it on costa; subterminal line whitish, somewhat dentate at veins 7, 6 and excurved at middle, with dentate black marks before it at middle and streaks beyond it in the interspaces; cilia with a series of minute white points at base; tornus obliquely truncate. Hind wing dark brown with a reddish tinge, the interspaces whitish except on terminal area; cilia ochreous white with red-brown spots from apex to vein 2; the underside white, the costal and terminal areas irrorated with brown and the apex suffused with brown, two discoidal points and an irregularly crenulate postmedial line.

Hab. Mexico, Jalapa (*Schaus*, *Trujillo*), 2 ♂, 3 ♀, Coatepec

(*Brooks*), 1 ♂; Costa Rica, Candelaria Mts. (*Underwood*), 2 ♂; Panama, Chiriqui (*Champion*), 3 ♀, type *ordinarius* Druce, Godman-Salvin Coll.; Venezuela, Aroa, 2 ♀; Brazil, Amazons, R. Solimões (*Trail*), 1 ♀ type. *Exp.* 34–40 millim.

2812. **Dipterygia lignaris.** (Plate CIX. fig. 19.)

Prometopus ordinarius, Butl. Trans. Ent. Soc. 1879, p. 21 (♀).
Hadena lignaris, Schaus, J. N.Y. Ent. Soc. vi. p. 112 (1898).

Head ochreous and rufous mixed; tegulæ and patagia deep purplish rufous, the former with slight dark medial line; dorsum of thorax rufous mixed with ochreous; pectus whitish tinged with purple; tibiæ irrorated with purplish, tarsi banded black and whitish; abdomen rufous, the ventral surface whitish irrorated with rufous and with sublateral and ventral black streaks. Fore wing red-brown suffused with purplish leaving a reddish fascia on inner margin from near base, the veins with fine black streaks, the median nervure and veins from end of cell defined on each side by slight whitish streaks; subbasal line represented by two oblique striæ from costa; a slight black streak in base of submedian fold; an obliique black streak above inner margin before the antemedial line, which is indistinctly double filled in with rufous, highly dentate and interrupted at the veins, strongly angled outwards above inner margin; claviform rather elongate, indistinctly defined by black; orbicular obsolete; reniform represented by pale yellow points on its outer edge and with black streaks beyond it in the interspaces; postmedial line double towards costa, bent outwards below costa, then almost obsolete, excurved and dentate to vein 4 and with oblique yellowish striga below vein 2, some pale points beyond it on costa; the interspaces of terminal area with blackish streaks and yellowish streaks above and below vein 6, the subterminal line obsolete except below vein 1 where it is incurved; tornus obliquely truncate. Hind wing deep reddish brown, the interspaces whitish except on terminal area; cilia yellowish white with a series of rufous marks from apex to vein 2; the underside white, the costal and terminal areas tinged with red and irrorated with brown, a black striga at upper angle of cell and point at lower angle, an irregularly crenulate postmedial line incurved at discal and submedian folds.

Hab. Colombia, type † ♂ in U.S. Nat. Mus.; Brazil, Amazons, R. Jutahi, Boaventura (*Trail*), 1 ♀. *Exp.* 44 millim.

2813. **Dipterygia assueta.** (Plate CIX. fig. 20.)

Prometopus assuetus, Butl. Trans. Ent. Soc. 1879, p. 21.

♀. Head and thorax grey tinged with purplish and rufous; palpi ochreous in front, the 3rd joint with small black spot; frons ochreous; tegulæ with black medial line; patagia with some black

scales near upper edge; pectus ochreous, the tibiæ irrorated with rufous, the tarsi banded with black; abdomen ochreous sometimes dorsally tinged with fuscous and with blackish bar before the rufous anal tuft, the ventral surface paler with slight sublateral and ventral series of black spots. Fore wing greyish slightly suffused with purplish to postmedial line, leaving a pale fascia on inner margin from near base, the veins finely streaked with black; subbasal line represented by double oblique striæ from costa; a slight black streak in base of submedian fold; an oblique streak above inner margin before the antemedial line, which is indistinct, oblique, dentate, strongly angled outwards above inner margin; claviform well developed, defined by black; orbicular and reniform with ochreous annuli defined by black, the former oblique elliptical, the latter with some white points on its outer edge and dark streaks beyond it to postmedial line; a somewhat dentate medial line oblique from costa to median nervure; postmedial line indistinctly double filled in with whitish, bent outwards below costa, then dentate and produced to whitish points on the veins, excurved to vein 4, then incurved, some whitish points beyond it on costa; subterminal line indistinct, pale, dentate, angled outwards at vein 7 and excurved at middle, defined on inner side by somewhat dentate red-brown marks and by a blackish patch below costa, the terminal area tinged with yellowish and with red-brown streaks in the interspaces and suffusion at discal fold and above tornus; a terminal series of minute black lunules; cilia brown with series of pale points at base; the tornus obliquely truncate. Hind wing deep reddish brown; cilia ochreous white with brown line through them; the underside whitish irrorated with brown, the costal and terminal areas tinged with red, a small discoidal spot, irregularly crenulate postmedial line, and diffused subterminal band.

Hab. Brazil, Amazons, R. Purus, Boavista (*Trail*), 1 ♀ type, R. Jutahi (*Trail*), 1 ♀. *Exp.* 38–40 millim.

2814. Dipterygia nicea. (Plate CIX. fig. 21.)

Xanthoptera nicea, Swinh. A. M. N. H. (7) vii. p. 470 (1901).

♂. Head and thorax ochreous tinged with rufous, the tegulæ with dark medial line and tips; patagia blackish; tarsi fuscous with pale rings; abdomen brown, the ventral surface ochreous. Fore wing ochreous tinged with rufous, the inner area suffused with leaden fuscous except at base and tornus, and the terminal area except at middle and apex; subbasal line represented by two slight red-brown striæ from costa; slight ochreous marks defined by red-brown striæ above and below vein 1 before the antemedial line, which is represented by two red-brown striæ from costa, then very oblique and hardly traceable, with two black striæ below origin of vein 2, then curved to inner margin; orbicular very small, round, with fuscous centre and whitish annulus strongly defined by red-brown; reniform ochreous defined by dark brown and with slight

brown lunule in centre and fuscous spot in lower part, narrow, its upper and lower extremities strongly produced; postmedial line represented by two red-brown striæ from costa, then very indistinct and slightly defined by ochreous on outer side, strongly bent outwards below costa, then dentate, strongly incurved below vein 4, some pale points beyond it on costa; subterminal line pale, minutely waved, oblique and defined below middle on inner side by a dark brown band, emitting a streak to termen at middle, the area beyond it leaden grey just above middle and on inner half; a terminal series of minute black lunules; cilia chequered ochreous and brown with a brownish line at middle. Hind wing reddish brown; cilia ochreous; the underside brownish white, a small brown discoidal spot and crenulate postmedial line with the area beyond it suffused with brown.

♀. Fore wing with the inner and terminal areas not suffused with leaden grey, the area between the ante- and postmedial lines suffused with dark brown to submedian fold in which there is a black streak.

Hab. ANDAMANS, Port Blair, 1 ♂, 1 ♀ type. *Exp.* 36 millim.

Genus **PARASTICHTIS.**

	Type.
Parastichtis, Hübn. Verz. p. 212 (1827)	*hepatica.*
Septis, Hübn. Verz. p. 243 (1827)	*lithoxylea.*
Xylophasia, Steph. Ill. Brit. Ent., Haust. ii. p. 174 (1829)	*lithoxylea.*
Xylena, Hübn. Tent. ined. (*nec* Treit.)	*lithoxylea.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about middle of frons and rather broadly fringed with hair, the 3rd short; frons smooth, with tuft of hair; eyes large, rounded; antennæ of male ciliated; thorax clothed with scales and hair mixed, a divided dorsal ridge-like crest larger on pro- and metathorax; tibiæ fringed with hair; abdomen with dorsal series of crests and lateral fringes of hair. Fore wing rather long and narrow, the apex rounded, the termen crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing whitish with the costal area and cell suffused with black ..... *nigricostata.*
B. Fore wing not whitish with the costal area and cell suffused with black.
  a. Fore wing with more or less prominent dark streak below base of cell.
    a^1. Fore wing with dark streak in submedian interspace between ante- and postmedial lines.
      a^2. Fore wing with veins 4, 3 defined by whitish streaks extending to termen.
        a^3. Fore wing ochreous tinged with rufous.
          a^4. Fore wing with the streak on medial area in submedian fold rufous ..... *cuculliformis.*
          b^4. Fore wing with the streak on medial area in submedian fold black ..... *verbascoides*

. Fore wing grey suffused with fuscous brown.
a^4. Hind wing wholly tinged with fuscous.
a^5. Fore wing with strong black fascia on medial area in submedian fold ..... *nigrior.*
b^5. Fore wing with slight black streak on medial area in submedian fold ..... *cariosa.*
b^4. Hind wing white, the termen tinged with fuscous ..... *relicina.*
b^2. Fore wing with veins 4, 3 not defined by whitish streaks.
a^3. Fore wing with the orbicular very narrow and oblique.
a^4. Fore wing ochreous white slightly tinged with rufous ..... *lithoxylea.*
b^4. Fore wing pale rufous..... *sublustris.*
c^4. Fore wing whitish slightly tinged with brown..... *arabs.*
d^4. Fore wing strongly suffused with rufous or brown.
a^5. Fore wing with white lunule on postmedial line in submedian interspace.
a^6. Fore wing with double series of black points beyond the postmedial line.
a^7. Fore wing ochreous suffused with rufous..... *cristata.*
b^7. Fore wing grey suffused with dark brown..... *vulgaris.*
b^6. Fore wing without double series of black points beyond postmedial line ... *auranticolora.*
b^5. Fore wing without white lunule on postmedial line in submedian interspace.
a^6. Fore wing with the subterminal line dentate to termen on veins 4, 3.
a^7. Fore wing suffused with red-brown ... *lignicolora.*
b^7. Fore wing suffused with fuscous brown ..... *antennata.*
b^6. Fore wing with the subterminal line not dentate to termen on veins 4, 3 ..... *perstriata.*
b^3. Fore wing with the orbicular large, oblique elliptical.
a^4. Fore wing without white points on outer edge of reniform.
a^5. Fore wing with the basal half concolorous.
a^6. Fore wing with the subterminal line dentate to termen ..... *monoglypha.*
b^6. Fore wing with the subterminal line not dentate to termen ..... *dionea.*
b^5. Fore wing with the basal half suffused with black, the terminal half pale ..... *strigidisca.*
b^4. Fore wing with pale points on outer edge of reniform ..... *submarginata.*
c^3. Fore wing with the orbicular small, round ..... *flavistigma.*
b^1. Fore wing without dark streak in submedian interspace between ante- and postmedial lines.
a^2. Fore wing with the orbicular narrow and elongate.
a^3. Fore wing rufous, without dark shades ..... *genialis.*
b^3. Fore wing with brown and fuscous shades.
a^4. Fore wing without dentate dark mark in submedian interspace before subterminal line ..... *chinensis.*

b^4. Fore wing with more or less developed dentate dark mark in submedian interspace before subterminal line.
a^5. Fore wing without whitish lunule on outer edge of reniform.
a^6. Fore wing with the dark mark in submedian interspace before subterminal line not extending to postmedial line.
a^7. Fore wing with the claviform small and not filled in with brown ..... *hepatica.*
b^7. Fore wing with the claviform large and filled in with brown ..... *sodalis.*
b^6. Fore wing with the dark mark in submedian interspace before subterminal line extending to postmedial line.
a^7. Thorax suffused with rufous or purple-brown ..... *rurea.*
b^7. Thorax suffused with black..... *vultuosa.*
b^5. Fore wing with small whitish lunule on outer edge of reniform.
a^6. Fore wing with distinct triangular blackish shades from termen below apex and above termen.
a^7. Fore wing not largely suffused with black ..... *apamiformis.*
b^7. Fore wing largely suffused with black *multicolora*
b^6. Fore wing without distinct triangular blackish shades from termen below apex and above tornus.
a^7. Hind wing with the basal area whitish *plutonia.*
b^7. Hind wing almost uniform brown ... *funerea.*
b^2. Fore wing with the orbicular rounded.
a^3. Fore wing red-brown; hind wing uniform brown ..... *boopis.*
b^3. Fore wing grey; hind wing whitish tinged with brown ..... *occidens.*
b. Fore wing without dark streak below base of cell.
a^1. Fore wing with black streak in submedian interspace between ante- and postmedial lines.
a^2. Fore wing without white points on outer edge of reniform..... *albina.*
b^2. Fore wing with white points on outer edge of reniform ..... *castanea.*
b^1. Fore wing without black streak in submedian interspace between ante- and postmedial lines.
a^2. Fore wing dark purplish red, the postmedial area grey except towards costa ..... *arctica.*
b^2. Fore wing rufous or pale purplish.
a^3. Fore wing with large white lunule on outer edge of reniform ..... *leucostigma.*
b^3. Fore wing with white points on outer edge of reniform..... *purpurina.*
c^3. Fore wing without white points on outer edge of reniform..... *veterina.*
c^2. Fore wing grey with the costal area suffused with rufous.
a^3. Fore wing with the terminal area suffused with black except at apex..... *rorulenta.*
b^3. Fore wing with the terminal area slightly tinged with fuscous except at apex..... *suffusca.*

2815. **Parastichtis nigricostata**, n. sp. (Plate CIX. fig. 22.)

Head and thorax pale ochreous; palpi tinged with rufous at sides; vertex of head purplish brown; tegulæ with three dark lines with purplish grey between them; legs irrorated with dark brown, the tarsi brown with pale rings; abdomen ochreous dorsally suffused with fuscous leaving pale segmental bands. Fore wing pale ochreous; the costal area suffused with purplish fuscous to near apex expanding in cell before and between the stigmata; subbasal line represented by double oblique striæ from costa, the antemedial line by double oblique striæ from costa and a faint elongate double tooth above inner margin; orbicular and reniform small with slight rufous centres, undefined except by the dark expansion of costal area, the former very oblique and pointed above, a black streak in cell before and between them; black streaks beyond the cell above veins 7, 6; postmedial line hardly traceable, very strongly bent outwards below costa, then dentate, very oblique below vein 4 and angled inwards in submedian fold, some pale points beyond it on costa; subterminal line represented by traces of oblique white and fuscous streaks in the interspaces; an oblique wedge-shaped grey mark from termen below apex; some slight dark points on termen; cilia ochreous and rufous. Hind wing brownish ochreous, the lower part of cell and area below it semihyaline, the terminal area broadly suffused with fuscous except towards tornus; cilia ochreous. Under side of fore wing ochreous suffused with fuscous and with purplish beyond the cell, a punctiform black postmedial line, ochreous patches on termen at apex and middle; hind wing whitish, the costal area ochreous irrorated with black, the terminal area suffused with fuscous and with purplish towards apex, a slight waved postmedial line with dark points on the veins and some points on termen.

♂. Abdomen dorsally fuscous except the crests and anal tuft; fore wing suffused in parts with pink; hind wing with the costal and inner areas, the veins and terminal area fuscous; underside of fore wing with the ground-colour white, hind wing white, the costal area irrorated with black.

Hab. Sierra Leone (*Austen*), 1 ♀ type; Mauritius, Curepipe (*Tulloch*), 1 ♂. *Exp.* 52 millim.

2816. **Parastichtis cuculliformis.** (Plate CIX. fig. 23.)

Hadena cuculliformis Grote, Check List, Noct. p. 27 (1875); Smith, Cat. Noct. N. Am. p. 139.

Head and thorax rufous mixed with ochreous and purple-brown; frons with lateral blackish bars; tegulæ with medial black line; patagia with purple-brown streaks near edges; dorsal crest blackish mixed with grey; tibiæ and tarsi slightly streaked with brown; abdomen pale rufous, dorsally suffused with fuscous mixed with grey. Fore wing ochreous tinged with rufous, the veins with fine dark streaks, the interspaces streaked with rufous; subbasal line represented by double oblique rufous striæ from costa; a rufous streak

in submedian fold and oblique streak above inner margin before the antemedial line, which is represented by double oblique rufous striæ from costa, then almost obsolete, very highly dentate and strongly retracted to inner margin; orbicular defined by rufous, very oblique and confluent with the reniform, which is slightly defined on inner side and by dark points on outer; an oblique medial dark striga from costa; postmedial line double towards costa, bent outwards below costa, then oblique, represented by double black points on the veins with white points between them and a white striga angled inwards in submedian interspace, some pale points beyond it on costa; subterminal line ochreous defined on inner side by elongate rufous dentate marks, angled outwards at veins 7, 6 and to termen at veins 4, 3, with deep rufous patch beyond it above middle and interrupted by deep rufous in submedian interspace extending to before postmedial line. Hind wing pale ochreous, the terminal area suffused with brown; cilia ochreous white with a brown line through them; the underside whitish, the costal and terminal areas tinged with rufous, a discoidal point and slight curved postmedial line.

Hab. U.S.A., California, Sauzalito, 2 ♂, 1 ♀ type. *Exp.* 48 millim.

Larva. Head shining red-brown; body cylindrical, smaller behind, the back strongly shaded in blackish leaving pale dorsal and subdorsal lines and a broad pale stigmatal one, below which there is no dark shade; cervical shield light brown, dark on the front edge, cut by three pale lines.—H. G. D.

2817. **Parastichtis verbascoides.** (Plate CIX. fig. 24.)

Xylophasia verbascoides, Guen. Noct. i. p. 141 (1852); Smith, Cat. Noct. N. Am. p. 139.

Head and thorax red-brown mixed with white and black; frons with black bar; tegulæ with medial black line and black tips; patagia with blackish fascia near upper edge; abdomen red-brown, greyish at base. Fore wing ochreous suffused with rufous except costal area; some whitish suffusion below costa and on inner area except at base and some black irroration on costal area; the median nervure, vein 1 and the veins of terminal area with fine black streaks slightly defined by white; subbasal line represented by faint double oblique rufous striæ from costa; a sinuous black streak in base of submedian fold and oblique streak above inner margin near base; antemedial line almost obsolete except for double striæ from costa and very oblique streak towards inner margin; a diffused black fascia from vein 1 before the antemedial line to postmedial line at submedian fold; claviform very faintly defined, elongate and acute at extremity; orbicular very indistinctly defined by rufous, open above, very oblique, acute at lower extremity and almost touching the reniform, which is defined by dark points above, undefined below; rufous streaks above terminal part of median nervure and veins 4, 3; faint traces of a curved medial line; postmedial line double towards costa, strongly bent outwards

below costa, then reduced to double black points on the veins, below vein 2 incurved and defined by white on outer side, some pale points beyond it on costa; subterminal line indistinct, pale, angled outwards at vein 7 and to termen at veins 4, 3, then incurved, with dark patches beyond it above and below middle; a terminal series of black points; cilia fuscous intersected with rufous. Hind wing ochreous whitish nearly uniformly suffused with fuscous; a fine dark terminal line; cilia ochreous; the underside ochreous white, the costal and terminal areas tinged with red-brown and irrorated with fuscous, a dark discoidal spot and sinuous postmedial line with minute dark streaks on the veins.

Hab. Canada, Ottawa (*Young*), 1 ♂, 2 ♀; U.S.A., Middle, Eastern and Central States, Massachusetts, Beverly, 1 ♀, New York, Trenton Falls (*Doubleday*), 2 ♂, 2 ♀ type, Evans Center (*Grote*), 1 ♂, 3 ♀, Schenectady (*Lintner*), 1 ♂, 1 ♀. *Exp.* 46–50 millim.

2818. Parastichtis nigrior. (Plate CIX. fig. 25.)

Xylophasia nigrior, Smith, Proc. U.S. Nat. Mus. xiii. p. 437 (1890); id. Cat. Noct. N. Am. p. 139.

♀. Head and thorax white mixed with purplish brown and black; sides of palpi and frons blackish; tegulæ with black medial line; patagia with diffused black streak near upper edge; tarsi blackish ringed with grey; abdomen grey irrorated with brown, the dorsal crests dark at tips. Fore wing grey-white suffused with purple and fuscous, leaving the costal area whitish to postmedial line, the veins streaked with black and defined by whitish, especially veins 4, 3; subbasal line represented by double oblique black striæ from costa; a sinuous black streak in base of submedian fold, and an oblique streak above inner margin before the antemedial line which is indistinct, double at costa, then oblique, dentate, very strongly angled outwards in submedian fold and above inner margin, a diffused black fascia in submedian interspace from before it to postmedial line almost obliterating the claviform; orbicular and reniform with grey annuli defined by black, the former small, very oblique elliptical; traces of a waved medial line oblique from costa to median nervure; postmedial line defined by white on outer side, double at costa, bent outwards below costa, excurved to vein 4, then oblique, some white points beyond it on costa; subterminal line represented by a series of dentate black marks in the interspaces with slight whitish marks on them and emitting streaks to the terminal series of small black lunules; cilia fuscous intersected with ochreous. Hind wing pale tinged with ochreous and nearly uniformly suffused with fuscous, the veins and a fine terminal line dark; cilia ochreous white with some fuscous marks near tips; the underside white tinged with ochreous and irrorated with fuscous, a discoidal lunule and sinuous postmedial line.

Hab. U.S.A., Maine, New York, Evans Center (*Grote*), 3 ♀. *Exp.* 48 millim.

2819. Parastichtis cariosa. (Plate CIX. fig. 26.)

Xylophasia cariosa, Guen. Noct. i. p. 144 (1852); Smith, Cat. Noct. N. Am. p. 139.
Hadena idonea, Grote, Can. Ent. xiv. p. 18 (1882).
Hadena cluna, Streck. Lep. Rhop. & Het. Suppl. i. p. 7 (1898); Dyar, Cat. Lep. N. Am. p. 115.

Head and thorax grey tinged with brown and mixed with black; sides of palpi and frons black; tegulæ with medial black line; patagia with black streak near upper edge; tarsi blackish with pale rings; abdomen grey tinged with fuscous, the dorsal crests dark, the anal tuft ochreous. Fore wing grey faintly tinged with purplish and irrorated with fuscous, the inner area more or less suffused with fuscous; subbasal line represented by two black striæ from costa, a sinuous black streak in base of submedian fold and oblique streaks above vein 1 and inner margin before the antemedial line, which is double, angled outwards below costa, then oblique waved, retracted to inner margin; claviform defined by black, with a black streak from its lower edge to postmedial line; orbicular and reniform whitish defined by black and their centres by fuscous, the former rounded; an indistinct medial line oblique from costa to vein 2; postmedial line double at costa, bent outwards below costa, then minutely dentate and produced to double black points on the veins with white points between them, excurved to vein 4, then incurved and defined by white on outer side; some white points beyond it on costa; subterminal line whitish, defined on inner side by dentate black marks except towards costa, angled outwards at vein 7 and dentate to termen at veins 4, 3, then incurved, the area beyond it blackish except at apex; a terminal series of small black lunules; cilia fuscous intersected with grey. Hind wing greyish uniformly suffused with fuscous, the cilia ochreous; the underside whitish tinged with brown, the costal area irrorated with brown, a dark discoidal spot, curved postmedial line, and diffused subterminal band.

Hab. Canada, 1 ♀; U.S.A., Maine to Texas, New York, 2 ♂, type *idonea*, Trenton Falls (*Doubleday*), 4 ♀ type, New Jersey, Anglesea, 1 ♀, Ohio, Columbus (*Tallant*), 1 ♂, Arizona. *Exp.* 44–46 millim.

2820. Parastichtis relicina. (Plate CIX. fig. 27.)

Hadena relicina, Morr. Proc. Bost. Soc. N. H. xvii. p. 216 (1874); Smith, Cat. Noct. N. Am. p. 140.

♀. Head and thorax fuscous brown mixed with some grey; palpi blackish at sides; frons with lateral black bars: tegulæ with black medial line; abdomen whitish suffused with brown. Fore wing whitish thickly irrorated and suffused with brown except below and beyond end of cell, the veins streaked with black; a black streak below base of cell; subbasal line represented by slight oblique dark striæ from costa; antemedial line indistinct, rather strongly dentate; claviform defined by black, elongate and acute

at extremity; orbicular and reniform with brownish centres and slight pale annuli defined by black, the former very oblique elliptical, the latter undefined on outer side and with slight fuscous marks in lower part; traces of an oblique waved line from reniform to inner margin; postmedial line defined by whitish on outer side, strongly bent outwards below costa, then dentate, excurved to vein 4, then oblique and with some brown suffusion before it below vein 2, some white points beyond it on costa; the interspaces of terminal area with wedge-shaped brown streaks and veins 7, 6, 4, 3, 2, 1 defined by wedged-shaped whitish streaks, on veins 7, 6, 4, 3 extending to the termen and cilia; a fine waved black terminal line. Hind wing white, the veins and terminal area slightly tinged with fuscous brown; a terminal series of dark lunules; the underside with the costal and terminal area to vein 2 irrorated with brown, a slight diffused postmedial line from costa to vein 2.

Hab. U.S.A., Texas, 1 ♀, Colorado, Glenwood Springs. *Exp.* 50 millim.

Larva. Head green, faintly brown mottled. Body cylindrical, green with slight brown mottling, without distinct lines.—H. G. D.

2821. Parastichtis lithoxylea.

Noctua lithoxylea, Schiff. Wien. Verz. p. 75 (1776); Fabr. Mant. Ins. ii. p. 182 (1787); Dup. Lép. Fr. vii. pt. i. p. 175, pl. 111. f. 5; Steph. Ill. Brit. Ent., Haust. ii. p. 175; Wood, Ind. Ent. f. 225; Snell. Vlind. Ned. p. 368; Staud. Cat. Lep. pal. p. 174.
Noctua sublustris, Esp. Schmett. iv. pl. 133, f. 2 (1788), nec f. 1.
Noctua musicalis, Esp. Schmett. iv. pl. 147. f. 5 (1790).

Ochreous white slightly tinged with rufous; palpi, frons and pectus in front deeper rufous; sides of frons with slight dark bars; tegulæ with slight medial dark line; patagia with some brown scales near upper edge; crests of thorax and abdomen rufous. Fore wing ochreous white slightly tinged with rufous; subbasal line represented by two oblique rufous striæ from costa; a slight dark streak below base of cell and another above inner margin near base; antemedial line with double oblique rufous striæ from costa, angled outwards in cell, to postmedial line in submedian fold, and above inner margin; orbicular faintly defined by rufous, very oblique elliptical; reniform hardly defined except by some dark points; a curved rufous medial shade from costa to submedian fold; postmedial line double at costa, then very indistinct, bent outwards below costa, then strongly dentate and produced to a double series of dark points on the veins, excurved to vein 4, then oblique, below vein 2 defined by white on outer side and angled inwards in submedian fold to the antemedial line, some pale points beyond it on costa; a rufous streak above vein 4; subterminal line slight, whitish, defined by the area beyond it at middle and towards tornus being suffused with rufous with dark streaks on the veins, angled outwards at vein 7, to termen at veins 4, 3, and angled inwards at discal and submedian folds; a terminal series of

small triangular dark spots; cilia chequered brown and whitish. Hind wing ochreous white tinged with brown especially on the veins and terminal area; a terminal series of brown points and striæ; the underside with discoidal lunule and curved postmedial line with minute dark streaks on the veins.

Hab. Britain, Leech Coll.; France; Denmark, Leech Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland; Spain, Aragon; N. Italy; Dalmatia; Scandinavia; Finland; Russia, Livonia, Zeller Coll.; Armenia; Asia Minor, Pontus, Bithynia; W. Siberia, Altai. *Exp.* 46–52 millim.

Larva. Meyr. Brit. Lep. p. 131; Barrett, Lep. Brit. iv. p. 357, pl. 176. f. 2. Brownish grey slightly tinged with greenish or ochreous; spiracular line hardly paler; spots large, black; head and thoracic plate brown or black. Food-plants: Grasses. 9–5.

2822. Parastichtis sublustris.

Noctua sublustris, Esp. Schmett. iv. pl. 133, f. 1 (1788); Steph. Ill. Brit. Ent., Haust. ii. p. 175; Wood, Ind. Ent. f. 227; Snell. Vlind. Ned. p. 369; Staud. Cat. Lep. pal. p. 174.

Noctua lithoxylea, Hübn. Eur. Schmett., Noct. f. 240 (1802), nec Schiff.

Xylophasia musicalis, Dup. Lép. Fr. vii. pt. i. p. 177, pl. 113. f. 1 (1827), nec Esp.

Ochreous suffused with rufous; palpi with some blackish hair at sides; frons with lateral blackish bars; fore femora blackish above; spurs banded with fuscous; abdomen whitish at base. Fore wing with the subbasal line represented by slight double rufous striæ from costa and cell; a slight wedge-shaped rufous mark above inner margin near base; antemedial line slight, rufous, with double striæ from costa, then oblique, angled outwards in submedian fold and above inner margin and inwards on vein 1; claviform slightly defined by rufous; orbicular and reniform slightly defined by rufous, the former very oblique elliptical; a curved medial rufous shade from costa to submedian fold; postmedial line double at costa, bent outwards below costa, then dentate and produced to a series of brown points on the veins, excurved to vein 4, then oblique, slightly defined by whitish on outer side, angled inwards in submedian fold and connected by a streak with the antemedial line, some pale points beyond it on costa; subterminal line faint, pale, hardly defined except by the area beyond it being dark rufous at middle and towards tornus with dark streaks on the veins, angled outwards at vein 7, to termen at veins 4, 3, and angled inwards in discal and submedian folds; a terminal series of slight dark lunules; cilia fuscous intersected with rufous. Hind wing ochreous suffused with rufous, the veins with dark streaks; a slight discoidal lunule, curved postmedial line, and fine dark terminal line; cilia reddish ochreous with slight brown line through them; the underside pale ochreous, the costal and terminal areas suffused with rufous, a small discoidal spot and sinuous postmedial line with minute dark streaks on the veins.

Hab. Britain (*Doubleday*, *McLachlan*), Leech Coll.; France; Germany, Zeller, Frey, and Leech Colls.; S. Scandinavia. *Exp.* 44–50 millim.

Larva. Meyr. Brit. Lep. p. 131; Barrett, Lep. Brit. iv. p. 361, pl. 176. f. 3. Similar to *P. lithoxylea* but redder.

*2823. Parastichtis arabs.

Hadena arabs, Oberth. Ét. Ent. vi. p. 88, pl. 11. f. 8 (1881); Staud. Cat. Lep. pal. p. 173.

♂. Head and thorax reddish brown mixed with greyish; frons with slight dark bar; tegulæ with slight black medial line; abdomen brown mixed with greyish. Fore wing grey-white suffused with pale brown and slightly irrorated with fuscous; a sinuous black streak below base of cell; subbasal line represented by an oblique black striga from costa; an oblique black streak above inner margin before the antemedial line, which is black slightly defined by whitish on inner side, angled outwards below costa, inwards on median nervure and vein 1 and outwards to near postmedial line in submedian fold, where there is a black streak from it to postmedial line, and above inner margin; claviform absent; orbicular small, elongate, pale defined by black; reniform very ill-defined except below; medial shade oblique to median nervure, then diffused outwards to postmedial line and down to submedian fold; postmedial line black defined by whitish on outer side, bent outwards below costa, then dentate and produced to short streaks on the veins, excurved to vein 4, then incurved; subterminal line indistinct, whitish, defined on inner side by small dentate black marks at middle and with brown streaks beyond it in the interspaces, angled outwards at vein 7 and dentate to termen at veins 4, 3; a terminal series of small dark lunules; cilia brown intersected with whitish. Hind wing white, the veins and terminal area tinged with brown; the underside with the costal and terminal areas irrorated with brown, a curved postmedial line.

Hab. Algeria, Sebdou, type † ♂ in Coll. Oberthür. *Exp.* 42 millim.

This is recorded in error as a variety of *Eumichtis solieri*, vol. vi. p. 331.

2824. Parastichtis cristata. (Plate CIX. fig. 28.)

Hadena cristata, Grote, Bull. Geog. Geol. Surv. Terr. iv. p. 176 (1878); Smith, Cat. Noct. N. Am. p. 140.

♀. Head and thorax rufous mixed with whitish, purplish and a few black scales; frons with lateral black bars; tegulæ with slight black medial line; patagia with dark line near upper edge; tibiæ with some black marks; tarsi slightly banded with black; abdomen ochreous tinged with rufous and irrorated with brown, the dorsal crests tipped with rufous and fuscous. Fore wing ochreous suffused in parts with rufous and slightly irrorated with

fuscous, the veins with slight dark streaks; subbasal line represented by two oblique striæ from costa; a sinuous brown streak below base of cell and wedge-shaped mark above inner margin near base; antemedial line represented by double black points on costa, median nervure and vein 1, and faint elongate teeth in and below cell and above inner margin; claviform absent; orbicular hardly traceable, small, very oblique elliptical with slight pale annulus; reniform with very faint whitish annulus with some brown points on it and three slight streaks before it in cell; medial line represented by an oblique striga from costa and slight waved line from submedian fold to inner margin; postmedial line double at costa, then hardly traceable, bent outwards below costa, then dentate and produced to a double series of black points on the veins with white points between them, excurved to vein 4, then incurved, with a white lunule in submedian interspace defined by black on inner side with a brown patch before it, some pale points beyond it on costa; subterminal line indistinct, pale, minutely dentate, incurved at discal and submedian folds, the area beyond it rufous with fuscous shades at discal and submedian folds, extending to postmedial line; a terminal series of black points; cilia chequered rufous and black. Hind wing ochreous suffused with fuscous leaving some ochreous tinged with reddish on termen from apex to submedian fold; two dark postmedial points on vein 2; cilia ochreous tinged with rufous; the underside ochreous irrorated with fuscous, a dark discoidal lunule, sinuous postmedial line with minute dark streaks on the veins, and traces of diffused subterminal line.

Hab. U.S.A., New York, Evans Center (*Grote*), 1 ♀ type, Buffalo. *Exp.* 50 millim.

2825. Parastichtis vulgaris. (Plate CIX. fig. 29.)

Xylophasia vulgaris, Grote & Rob. Proc. Ent. Soc. Phil. vi. p. 18, pl. 3. f. 2 (1866); Smith, Cat. Noct. N. Am. p. 139.

Head and thorax grey mixed with dark brown; palpi blackish at sides; frons with lateral black bars; tegulæ with black medial line; patagia with black streak near upper edge; tibiæ banded with blackish; abdomen grey-brown, the dorsal crests with blackish and grey tips. Fore wing grey tinged with purplish and irrorated with dark brown, the veins with dark streaks; subbasal line represented by double dark striæ from costa; a sinuous black streak below base of cell and oblique streak above inner margin near base; antemedial line indistinctly double, oblique, dentate, bent inwards to inner margin; claviform short, defined by black, with a black streak from its lower edge to postmedial line; orbicular and reniform with whitish annuli slightly defined by brown, the former very oblique elliptical, the latter somewhat constricted at middle; an oblique medial shade from costa to median nervure and slight dark streaks in the interspaces beyond lower angle of cell; postmedial line indistinctly double, bent

outwards below costa, then with double series of black points beyond it on the veins, incurved below vein 4, some pale points beyond it on costa; subterminal line whitish defined on inner side by slight dentate dark marks, angled outwards at vein 7 and dentate to termen at veins 4, 3, with dark patches beyond it above and below middle; a terminal series of black points; cilia chequered ochreous and dark brown. Hind wing greyish suffused with fuscous brown; slight postmedial dark points on vein 2; cilia ochreous white; the underside whitish, the costal and terminal areas irrorated with brown, a discoidal point, sinuous postmedial line, and traces of diffused subterminal band.

Hab. U.S.A., Middle and Eastern States, New York, Buffalo, 1 ♀ type, Evans Center (*Grote*), 1 ♂, Distr. of Columbia, Kansas, Douglas Co. (*Snow*), 1 ♂, 1 ♀. *Exp.* 44–46 millim.

2826. **Parastichtis auranticolora.** (Plate CIX. fig. 30.)

Hadena auranticolor, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 109 (1873); Smith, Cat. Noct. N. Am. p. 140.

Head and thorax deep rufous; frons with black bar; tegulæ with black medial line; patagia with some black scales near upper edge; abdomen grey tinged with purplish red, the dorsal crests blackish and grey at tips. Fore wing ochreous mostly suffused with deep rufous and with some greyish on antemedial and postmedial areas; the veins irrorated with grey; subbasal line represented by double oblique striæ from costa; a sinuous black streak below base of cell; an oblique streak above inner margin before the antemedial line, which is angled outwards below costa and in cell and more strongly in submedian fold and above inner margin; a blackish streak in submedian fold from it to postmedial line; claviform short defined by rufous; orbicular and reniform large with slight pale annuli defined by rufous, the former very oblique elliptical, the latter extending to below cell and angled inwards on median nervure; postmedial line indistinct, bent outwards below costa, then dentate and produced to black points on the veins, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line pale, defined by rufous on inner side and by dentate marks at middle, excurved below vein 7 and dentate to near termen at veins 4, 3, the area beyond it deep rufous; a terminal series of black points; cilia chequered rufous and fuscous. Hind wing ochreous white suffused with fuscous especially on terminal area; a slight pale postmedial line; cilia pale rufous with a slight dark line through them; the underside with the costal area irrorated with rufous, a discoidal point and sinuous postmedial line.

Ab. 1. Head, thorax, and fore wing more purple-brown instead of rufous, the subterminal line dentate to termen on veins 4, 3; hind wing darker.—Washington.

Hab. U.S.A., Nebraska, Washington, 1 ♀, Oregon, Colorado (*Snow*), 2 ♂ type, New Mexico, Beulah (*Cockerell*), 1 ♀, Arizona. *Exp.* 44–50 millim.

2827. Parastichtis lignicolora. (Plate CIX. fig. 31.)

Xylophasia lignicolora, Guen. Noct. i. p. 140 (1852); Smith, Cat. Noct. N. Am. p. 140.
Hadena quæsita, Grote, Can. Ent. viii. p. 26 (1876).

Head and thorax ochreous suffused with purplish rufous; palpi tinged with fuscous at sides; frons with lateral black bars; tegulæ with slight medial dark line; patagia with some dark scales near upper edge; tarsi fuscous with pale rings; abdomen ochreous tinged with rufous. Fore wing ochreous irrorated and suffused in parts with bright rufous, especially on costal and terminal areas, the veins with slight dark streaks; subbasal line represented by double oblique striæ from costa; a sinuous blackish streak below base of cell and slight wedge-shaped mark above inner margin near base; antemedial line very indistinct, double at costa, then oblique, waved, angled inwards on vein 1 and retracted to inner margin, a dark streak in submedian fold from it to postmedial line; orbicular and reniform with slight rufous centres and defined by rufous, the former very oblique elliptical, the latter angled inwards on median nervure; faint traces of a waved medial line; postmedial line defined by ochreous on outer side, double at costa, bent outwards below costa, then dentate and produced to a double series of dark points on the veins, excurved to vein 4, then oblique, some pale points beyond it on costa; subterminal line pale slightly defined by rufous on inner side, with dentate marks before it at middle and streak in submedian fold, angled outwards at vein 7 and to termen at veins 4, 3, the area beyond it deep rufous except at apex; a terminal series of small black lunules; cilia rufous with a fine pale line at base. Hind wing ochreous white, the terminal area tinged with brown; a terminal series of brown striæ; the underside with the costal area tinged with reddish and slightly irrorated with brown, a slight discoidal spot and sinuous postmedial line.

Ab. 1. *quæsita*. Ground-colour greyer and less ochreous, the suffusion on thorax and fore wing deep purple-brown, the markings dark; abdomen grey-brown; hind wing fuscous brown.

Hab. CANADA (*Norman*), 1 ♂, Renfrew Co., 1 ♀, Nova Scotia (*Redman*), 8 ♂, Ottawa (*Fletcher*, *Young*, *Saunders*), 3 ♂, 2 ♀, London (*Saunders*), 1 ♀, Manitoba, Aweme (*Criddle*), 1 ♀, Cartwright (*Heath*), 1 ♀; U.S.A., Northern, Eastern, Middle and Western States, Maine, 1 ♂ type *quæsita*, Massachusetts, Beverly, 1 ♂, 2 ♀, New York, Trenton Falls (*Doubleday*), 1 ♂, 1 ♀ type, Evans Center (*Grote*), 4 ♂, 3 ♀, Schenectady (*Lintner*), 1 ♀, Illinois, Chicago, 1 ♀, California (*Walsingham*), 1 ♀. *Exp.* 44–52 millim.

*2828. Parastichtis antennata. (Plate CIX. fig. 32.)

Xylophasia antennata, Smith, Pr. U.S. Nat. Mus. xiii. p. 439 (1890); id. Cat. Noct. N. Am. p. 140.

♂. Head, thorax, and abdomen fuscous brown mixed with reddish brown; tegulæ with dark medial line; patagia with dark

streak near upper edge. Fore wing red-brown suffused with fuscous brown, the postmedial area irrorated with whitish except towards costa; a black streak below base of cell; subbasal line represented by double black striæ from costa; antemedial line double, obsolescent on costal half, excurved in submedian interspace and bent inwards to inner margin, an oblique black streak before it above inner margin; claviform small, defined by black and with distinct black fascia from it to postmedial line; orbicular and reniform rather pale, indistinctly defined by black, the former narrow and oblique; an indistinct medial shade; postmedial line double at costa, then indistinct, bent outwards below costa, then dentate, incurved and distinct below vein 4, some pale points beyond it on costa; subterminal line pale, slightly defined by black on inner side, excurved below vein 7 and dentate to termen at veins 4, 3; terminal area darker except at apex; a fine black terminal line and pale line at base of cilia. Hind wing fuscous, paler at base; the underside with some red irroration, black discoidal spot and indistinct postmedial line.

Hab. U.S.A., California. *Exp.* 44 millim. This species is unknown to me, figured from drawing from type in U. S. Nat. Mus.

2829. **Parastichtis perstriata**, n. sp. (Plate CX. fig. 1.)

Head and thorax red-brown mixed with some black; palpi with the 2nd joint blackish at sides; frons with lateral black bars below and at middle; tegulæ with black medial line and some fuscous near tips; patagia blackish except upper edge; tarsi black with pale rings; abdomen rufous dorsally suffused with fuscous, the crests black near tips, sublateral black spots on terminal segments. Fore wing red-brown mixed with whitish; a sinuous black streak below base of cell defined by whitish above; subbasal line represented by double black striæ from costa; an elliptical pale-edged mark in base of cell; antemedial line indistinct, double, dentate, with whitish points before it on the veins, angled outwards above inner margin to the postmedial line and with oblique black streak before it above inner margin; claviform defined by blackish and with indistinct dark streak from it to postmedial line; orbicular and reniform with brownish centres and whitish annuli defined by black, the former narrow and very elongate and oblique, the latter with whitish point at lower extremity and dark streak from it to postmedial line; an oblique dark bar from middle of costa; postmedial line double, bent outwards below costa, then indistinct, dentate and produced to double black points on the veins with white points between them, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line whitish, excurved below vein 7, dentate at veins 4, 3 and incurved at discal and submedian folds, the area beyond it suffused with black except at apex, at discal and submedian folds forming triangular shades to near postmedial line; the veins and interspaces of terminal area with black streaks, the latter ending in

small lunules; cilia fuscous intersected with rufous. Hind wing reddish brown tinged with fuscous especially on terminal area; a slight discoidal lunule; cilia whitish tinged with rufous and with series of brown points; the underside whitish tinged with rufous, the costal and terminal areas irrorated with brown, a black discoidal lunule, sinuous postmedial line with minute dark streaks on the veins and subterminal shade.

Hab. W. China, Chang-yang (*Pratt*), 1 ♂, 3 ♀ type. *Exp.* 46 millim.

2830. Parastichtis monoglypha.

Noctua polyodon, Linn. Faun. Suec. ii. p. 322 (1761), nec Clerck, 1759; Dup. Lép. Fr. vii. pt. i. p. 176, pl. 111. f. 4; Steph. Ill. Brit. Ent., Haust. ii. p. 176.
Noctua monoglypha, Hüfn. Berl. Mag. iii. p. 308 (1767); Staud. Cat. Lep. pal. p. 173.
Noctua radicea, Schiff. Wien. Verz. p. 81 (1776); Hübn. Eur. Schmett., Noct. f. 82.
Hadena infuscata, Buchanan-White, Faun. Perthensis, pt. i. (1871).
Hadena uniformata, Weym. Jhrb. Nat. Ver. Elberfeld, 1878, p. 78.
Hadena obscura, Th. Mieg. Le Natural. 1886, p. 237.
Hadena polyglypha, Staud. Iris, iv. p. 286 (1891); id. Cat. Lep. pal. p. 173.
Hadena æthiops, Tutt, Br. Noct. i. p. 74 (1891).
Hadena pallida, Fuchs, Jhrb. Nass. 1892, p. 94.

Head and thorax red-brown mixed with white; palpi with some fuscous scales; frons with lateral black bars; tegulæ with black medial line; patagia with black streak near upper edge; tarsi banded with fuscous; abdomen red-brown, greyish at base. Fore wing grey-white more or less uniformly suffused with red-brown; subbasal line represented by double striæ from costa and cell; a sinuous black streak in base of submedian fold and a streak above inner margin near base; antemedial line indistinctly double filled in with grey, oblique, dentate, strongly angled outwards in submedian fold and above inner margin, then retracted to inner margin; claviform narrow, defined by black and with black streak from its lower edge to postmedial line; orbicular and reniform with slight greyish annuli defined by black, the former very oblique elliptical, the latter large and extending to well below cell; a diffused purple-brown medial shade; postmedial line double filled in with whitish, bent outwards below costa, then dentate, excurved to vein 4, then oblique, some white points beyond it on costa; subterminal line whitish, defined at middle by dentate black marks on inner side, angled outwards at vein 7 and to termen at veins 4, 3, angled inwards above and below vein 5 and incurved below vein 3; a terminal series of small black lunules; cilia red-brown intersected with whitish. Hind wing ochreous white tinged with brown, the terminal area broadly suffused with fuscous brown; a slight discoidal lunule and sinuous postmedial line; cilia ochreous white; the underside ochreous white, the costal area irrorated with brown, a discoidal spot, sinuous postmedial line, and diffused subterminal band.

Ab. 1. *polyglypha*. ♂. Fore wing with the orbicular small and more rounded; ♀. Grey and fuscous with hardly any red-brown tints.—Palestine, W. Turkestan, Mongolia.

Ab. 2. *infuscata*. Much darker, head, thorax and fore wing nearly uniformly suffused with black.

Hab. Britain, Hebrides, Leech Coll., Scotland, Leech Coll., England, Leech Coll.; France, Sand Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland; Spain; Italy; Scandinavia; Russia, St. Petersburg, Zeller Coll; Armenia; Asia Minor, Lydia, Taurus; Palestine; W. Turkestan, Leech Coll., Turcomania; Mongolia, Aksu; W. Siberia. *Exp.* 50–56 millim.

Larva. Meyr. Brit. Lep. p. 130; Barrett, Lep. Brit. iv. p. 365, pls. 177–178. Grey or brownish grey to dark purplish grey; spiracular line pale; spots large, black; head and thoracic plate brown or dark brown. Food-plants: Grasses. 9–5.

2831. **Parastichtis dionea.** (Plate CX. fig. 2.)

Hadena dionea, Smith, Can. Ent. xxxi. p. 258 (1899); Dyar, Cat. Lep. N. Am. p. 115.

♂. Head and thorax grey mixed with brown and black; frons with lateral black bars; tegulæ with black lines at middle and tips; tarsi black with pale rings; abdomen grey suffused with brown, the crests black at tips. Fore wing grey with a violaceous tinge suffused in parts with black-brown; a sinuous black streak below base of cell; subbasal line represented by double dark striæ from costa; antemedial line double, oblique and sinuous to submedian fold, then angled inwards on vein 1, an oblique black streak before it above inner margin; claviform defined by black, acute at extremity and with black streak from it to postmedial line; orbicular and reniform with whitish annuli defined by black, the former rather oblique elliptical, the latter with its centre defined by blackish; an indistinct medial line oblique from costa to below cell, then incurved; postmedial line black, double towards costa, bent outwards below costa, then with double series of black points beyond it on the veins, indistinct and excurved to vein 4, then incurved and distinct below vein 3, some whitish points beyond it on costa; subterminal line pale, defined on inner side by dentate black mark at middle, excurved below vein 7 and dentate at veins 4, 3, the area beyond it suffused with blackish and with black streaks on the veins and in interspaces; a terminal series of small black lunules. Hind wing whitish almost uniformly suffused with brown; cilia whitish at base, brown at tips; the underside whitish irrorated with brown especially on costal area, the veins with dark streaks, a black discoidal lunule, sinuous postmedial line, and traces of subterminal shade.

Hab. U.S.A., Wisconsin, 1 ♂, S. Dakota, Volga. *Exp.* 40 millim.

2832. Parastichtis strigidisca. (Plate CX. fig. 3.)

Apamea strigidisca, Moore, P. Z. S. 1881, p. 346, pl. 38. f. 9; Hmpsn. Moths Ind. ii. p. 210.

♀. Head and thorax greyish tinged with rufous and mixed with some dark brown and black; tarsi blackish with pale rings; abdomen greyish suffused with brown. Fore wing greyish ochreous and rufous, the basal half suffused with black except inner margin, the terminal area blackish except at apex; subbasal line double, black filled in with rufous, waved, from costa to submedian fold; antemedial line double indistinctly filled in with rufous, angled outwards below costa, oblique to submedian fold, then angled inwards on vein 1; claviform large, indistinctly defined by black; orbicular rufous defined by black at sides, oblique elliptical; reniform ochreous white, defined by black on inner side and below and slightly by brown on outer, somewhat angled inwards on median nervure and with irregular outer edge; an indistinct medial line oblique from costa to below cell; the area beyond the reniform rufous to postmedial line which is blackish defined by ochreous on outer side, slightly bent outwards below costa, then very minutely waved, oblique to vein 5, inwardly oblique to below angle of cell and sinuous to inner margin; postmedial area ochreous suffused with rufous and brown on costal half, the veins with slight dark streaks, the costa with pale points; subterminal line ochreous defined on inner side by brown suffusion, angled outwards to near termen at veins 7, 4, 3; a terminal series of small black lunules; cilia blackish with a fine ochreous line at base. Hind wing fuscous brown, the cilia ochreous white with a slight dark line through them. Underside of both wings ochreous, the costal areas tinged with rufous to postmedial line which is nearly straight on fore wing, minutely waved on hind wing; a broad fuscous subterminal band; fore wing with small discoidal lunule; hind wing with small annulus.

Hab. Sikhim (*Lidderdale*), 1 ♀. *Exp.* ♂ 42, ♀ 50 millim.

2833. Parastichtis submarginata. (Plate CX. fig. 4.)

Xylophasia submarginata, Leech, Trans. Ent. Soc. 1900, p. 69.

♂. Head and thorax rufous with a few white scales; palpi blackish at sides; frons with lateral black bars; tegulæ with blackish lines near base and tips; tarsi black ringed with white; abdomen grey-brown, the dorsal crests and anal tuft rufous. Fore wing red-brown with a slight purplish fuscous gloss; a slight black streak below base of cell; subbasal line double, waved, from costa to submedian fold; antemedial line double, waved, oblique, angled inwards on vein 1; claviform small, defined by black and with oblique blackish streak from it to postmedial line; orbicular defined by black and with a few black scales in centre, oblique elliptical; reniform defined by black with some white points in centre and on outer edge; a waved medial line, oblique from costa to below cell;

postmedial line double filled in with whitish, bent outwards below costa, then minutely dentate and produced to black and white points on the veins, incurved at discal fold and oblique below vein 4, some white points beyond it on costa; subterminal line whitish, defined on inner side by slight dentate black marks, angled outwards at vein 7 and somewhat dentate at veins 4, 3; a terminal series of small black lunules; cilia with fine whitish line at base. Hind wing cupreous brown, the terminal area rather darker; cilia whitish with a brown line through them; the underside whitish irrorated with brown, a dark discoidal lunule, curved, minutely waved postmedial line, and broad diffused subterminal band.

Hab. W. China, Omei-shan, 1 ♂ type. *Exp.* 50 millim.

2834. Parastichtis flavistigma. (Plate CX. fig. 5.)

Xylophasia flavistigma, Moore, P. Z. S. 1867, p. 50; Hmpsn. Moths Ind. ii. p. 209.
Apamea basalis, Moore, P. Z. S. 1881, p. 346.
Apamea denticulosa, Moore, Lep. Atk. p. 109, pl. 4. f. 13 (1882).

Head and thorax black tinged with leaden grey and mixed with some rufous, the dorsal crests rufous; frons with lateral black bars; tegulæ with black medial line; patagia with black line near upper edge; pectus ochreous tinged with red; tibiæ and tarsi black with pale rings; abdomen fuscous, the base and ventral surface yellowish. Fore wing deep leaden grey irrorated with black, the submedian fold and inner margin with rufous streaks; subbasal line double, waved, from costa to submedian fold; a sinuous black streak in base of submedian fold; antemedial line double, oblique, waved; claviform defined by diffused black below and at extremity; orbicular and inner side of reniform with slight rufous annuli defined by black, the former round, the latter with yellow lunule on its outer side and some rufous beyond it; an indistinct medial line oblique from costa to vein 2, then minutely waved; postmedial line double at costa, then obsolescent, bent outwards below costa, then dentate, angled outwards at vein 5, then incurved; the postmedial area yellow except towards costal and before subterminal line, with some pale points on costa; subterminal line rufous, defined on inner side by dentate dark marks, angled outwards at vein 7 and excurved at middle; a terminal series of small black spots; cilia black mixed with grey. Hind wing yellowish more or less tinged with fuscous, the terminal area suffused with greyish fuscous; cilia yellowish with a fuscous line through them; the underside yellowish, the costal and terminal areas suffused with fuscous, a small discoidal spot, sinuous postmedial line, and diffused subterminal band.

Ab. 1. *basalis*. Fore wing with the postmedial area less distinctly yellowish.—Punjab.

Hab. Punjab, Dalhousie, 1 ♂ type *basalis*, Simla (*Harford*), 1 ♀; Sikhim (*Atkinson, Möller, Dudgeon*), 3 ♂, 2 ♀, type. *Exp.* 44–48 millim.

2835. **Parastichtis genialis.** (Plate CX. fig. 6.)

Hadena genialis, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 66 (1874); Smith, Cat. Noct. N. Am. p. 141.

Pale rufous; abdomen paler at base. Fore wing with the markings very indistinct; subbasal line represented by traces of double striæ from costa; a slight rufous streak in base of submedian fold; antemedial line very indistinct, double, dentate; claviform slightly defined by rufous; orbicular and reniform with faint pale annuli defined by rufous, the former very oblique and acute at lower extremity; postmedial line indistinct, slightly defined by whitish on outer side, double towards costa, bent outwards below costa, then with pale points at the veins, excurved to vein 4, then oblique, some white points beyond it on costa; subterminal line indistinct, ochreous whitish, angled outwards at veins 7, 6 and to termen at veins 4, 3, with greyish streaks on the veins beyond it above middle and towards tornus. Hind wing pale rufous, slightly tinged with fuscous in female; the underside with the veins irrorated with white, a slight discoidal lunule and indistinct sinuous postmedial line.

Hab. U S.A., California, 1 ♂, 1 ♀ type. *Exp.* 48 millim.

2836. **Parastichtis chinensis.** (Plate CX. fig. 7.)

Xylophasia chinensis, Leech, Trans. Ent. Soc. 1900, p. 70.

♂. Head and thorax ochreous slightly mixed with purple-brown; palpi blackish at sides; frons with lateral black bars; antennæ tinged with fuscous; tegulæ with slight dark medial line; patagia with a few black scales near upper edge; tarsi blackish, ringed with ochreous white; abdomen ochreous white slightly irrorated with brown, the anal tuft ochreous. Fore wing pale ochreous, tinged with yellow and in parts suffused with purple-brown; a sinuous black streak below base of cell; subbasal line represented by double black striæ from costa; antemedial line indistinctly double, oblique, waved, angled outwards below costa and inwards on vein 1, with white points before it on median nervure and vein 1; claviform moderate, defined by black; orbicular with brown centre and ochreous annulus defined by black except above, oblique elliptical; reniform with ochreous annulus slightly defined except on inner side, some fuscous in lower part; a curved waved medial line, blackish from costa to median nervure, then indistinct; postmedial line bent outwards below costa, then minutely dentate and produced to black and white points on the veins, excurved to vein 4, then incurved; the postmedial area purple-brown towards costa with some white points on costa; subterminal line pale, angled outwards at vein 7 and inwards at discal and submedian folds, excurved and somewhat dentate at veins 4, 3, 2, with dark patches beyond it above and below middle; a waved terminal line and series of points in the interspaces; cilia fuscous with a pale

line at base. Hind wing pale ochreous, the veins darker, a slight discoidal bar, curved postmedial line, and diffused subterminal band; a dark terminal line and fuscous line through the cilia; the underside with the costal area irrorated with brown, a black streak in middle of cell, discoidal spot, waved postmedial line from costa to vein 2, and slight diffused subterminal line.

Hab. W. China, Chia-kou-ho (*Pratt*), 1 ♂ type. *Exp.* 42 millim.

2837. Parastichtis hepatica.

Noctua hepatica, Linn. Syst. Nat. ed. xii. p. 853 (1767); Clerck, Icones. pl. 8. f. 3; Hübn. Eur. Schmett., Noct. Text, p. 182 (1827); Dup. Lép. Fr. vii. pt. i. p. 204, pl. 113. f. 4; Frr. Beitr. iv. pl. 310; Staud. Cat. Lep. pal. p. 174.
Noctua characterea, Hübn. Eur. Schmett., Noct. ff. 133–638 (1802).
Noctua temera, Hübn. Eur. Schmett., Noct. f. 393 (1808).
Noctua epomidion, Haw. Lep. Brit. p. 170 (1809); Steph. Ill. Brit. Ent., Haust. ii. p. 178.
Noctua implexa, Hübn. Eur. Schmett., Noct. f. 639 (1822).
Hadena discrepans, Staud. Rom. Mém. v. p. 440 (1892).

Head and thorax purplish red mixed with grey and fuscous; palpi black at sides; frons with lateral black bars; tegulæ with medial black line; patagia with black line near upper edge; tarsi black ringed with white; abdomen ochreous tinged with purplish red and dark brown except at base, the dorsal crests dark, the anal tuft and ventral surface rufous. Fore wing ochreous suffused in

Fig. 16.—*Parastichtis hepatica*, ♂. ½.

parts with purplish red; a diffused black streak below base of cell and a streak above inner margin near base; subbasal line represented by slight double dark striæ from costa; antemedial line indistinctly double, waved, oblique; claviform moderate or small, defined by black; orbicular large, defined by black except above, oblique elliptical; reniform large, defined by black on inner side and below, and with some blackish in lower part, its inner edge straight; an indistinct minutely dentate curved medial line; postmedial line bent outwards below costa, then dentate and produced to black and white points on the veins, excurved to vein 4, then oblique, some white points beyond it on costa; subterminal line ochreous, defined on inner side by some fuscous suffusion, angled inwards at discal and submedian folds and excurved below vein 7

and at middle, the area beyond it suffused with fuscous except at apex and middle; a terminal series of small black lunules; cilia fuscous with an ochreous line at base. Hind wing ochreous suffused with fuscous brown especially on terminal area; a slight pale postmedial line; an ochreous mark on extremity of vein 2; cilia ochreous with a fuscous line through them; the underside ochreous, the costal area tinged with purplish red, a black streak in middle of cell, discoidal spot, curved postmedial line, and traces of diffused subterminal band.

Ab. 1. *discrepans*. Much darker; fore wing with blackish markings.—Ussuri.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller and Leech Colls.; Austria; Hungary; Switzerland; ?N. Italy; Dalmatia, Leech Coll.; Corfu; ?S. Sweden; Russia, Urals; W. Siberia, Altai, Leech Coll.; E. Siberia, Amurland, Ussuri. *Exp.* 44–48 millim.

Larva. Meyr. Brit. Lep. p. 132; Barrett, Lep. Brit. iv. p. 374, pl. 180. f. 2.

Grey-brown or dark purplish brown with darker freckles; dorsal line pale ochreous or whitish; subdorsal line indistinct, pale; spiracular line broad, pale greyish ochreous; head dark brown; thoracic plate blackish with whitish lines. Food-plants: Grasses. 10–4.

2838. Parastichtis sodalis.

Xylophasia sodalis, Butl. A. M. N. H. (5) i. p. 83 (1878); id. Ill. Het. B. M. ii. p. 24, pl. 29. f. 2; Hmpsn. Moths Ind. ii. p. 210.
Apamea obliquiorbis, Moore, Lep. Atk. p. 109 (1882).

Head and thorax fuscous mixed with greyish or red-brown; frons with lateral black bars; tegulæ with black medial line; tarsi banded with black; abdomen greyish suffused with fuscous, the dorsal crests and anal tuft tinged with rufous. Fore wing ochreous suffused with rufous and fuscous, the costal area and the cell and area just below it on medial area rather darker, the veins with dark streaks; subbasal line represented by two oblique striæ from costa; a slight streak in base of cell, sinuous streak in submedian fold and oblique streak above inner margin near base; antemedial line double at costa and angled outwards below costa, then oblique, angled inwards on vein 1 and strongly outwards above inner margin; claviform brown defined by black, a dark streak from its upper edge to postmedial line; orbicular and reniform defined by brown, the former very oblique elliptical, the latter with four whitish points on edges, its outer side undefined and its lower part filled in with fuscous; traces of a medial line oblique from costa to lower angle of cell, then somewhat dentate; postmedial line double towards costa, bent outwards below costa, then indistinct, dentate and produced to slight streaks on the veins, incurved below vein 4, a brown patch beyond it on costa with some pale points on it; subterminal line pale rufous defined on inner side by slight dentate blackish marks, angled outwards at vein 7 and excurved at middle,

the area beyond it purplish fuscous except towards apex; a terminal series of small black lunules; cilia dark brown with punctiform ochreous line at base. Hind wing suffused with fuscous brown; a slight discoidal spot and oblique postmedial line; cilia ochreous white with brown line through them except towards tornus, the underside ochreous white, the costal and terminal areas irrorated with brown, a slight streak in cell, discoidal spot, oblique postmedial line, and traces of diffused subterminal line.

Hab. Japan, Yokohama (*Jonas*, *Pryer*), 2 ♂, 3 ♀ type; Sikhim (*Russell*), 2 ♀ type *obliquiorbis*. *Exp.* 40–46 millim.

2839. Parastichtis rurea.

Noctua rurea, Fabr. Syst. Ent. p. 618 (1775); Dup. Lép. Fr. vii. pt. ii. p. 197, pl. 113. f. 2; Frr. Beitr. pl. 4. f. 2; Steph. Ill. Brit. Ent., Haust. ii. p. 176; Staud. Cat. Lep. pal. p. 174.
Noctua alopecurus, Esp. Schmett. iv. p. 473, pl. 147. f. 3 (1790).
Noctua luculenta, Esp. Schmett. iv. pl. 133. ff. 3, 4 (1788).
Noctua putris, Hübn. Eur. Schmett., Noct. f. 241 (1820), nec Linn.
Noctua combusta, Hübn. Eur. Schmett., Noct. f. 366 (1808).
Apamea aquila, Donz. Ann. Soc. Ent. Fr. vi. p. 476, pl. 18. f. 6 (1837); Dup. Lép. Fr., Suppl. iii. p. 448, pl. 39. f. 5.
Hadena exstincta, Staud. Stett. ent. Zeit. 1889, p. 43.

Head and thorax ochreous mixed with rufous and some white scales; palpi blackish at sides; frons with lateral black bars; tegulæ with black medial line and purple-brown tips; patagia purple-brown edged with rufous above; dorsal crest tipped with black; tarsi banded with fuscous; abdomen reddish ochreous slightly irrorated with fuscous, the dorsal crests blackish. Fore wing whitish ochreous to ochreous suffused with rufous especially on costal area, the veins irrorated with black and white scales, the inner margin more or less suffused with white, with a wedge-shaped dark mark above base; subbasal line represented by two oblique rufous striæ from costa and two points on median nervure; antemedial line represented by double rufous striæ from costa, then very indistinct, oblique, dentate and angled inwards to double black points on the veins, bent inwards to inner margin; claviform slightly defined by rufous, acute at extremity; orbicular and reniform with slight rufous centres and slightly defined by rufous, the former very oblique wedge-shaped, the latter with slight white streaks on upper and lower edges and somewhat angled inwards on median nervure, the cell between them tinged with rufous; traces of a medial line oblique from costa to lower angle of cell, then dentate; postmedial line double at costa, bent outwards below costa, then dentate and produced to a double series of black points on the veins, excurved to vein 4, then oblique, some whitish points beyond it on costa; subterminal line only defined by the area beyond it being deep rufous except at apex and the veins of terminal area streaked with blackish and white, angled outwards at vein 7, excurved at middle almost to termen and angled inwards at discal

and submedian folds to postmedial line; a terminal series of small black lunules; cilia rufous and black intersected with greyish. Hind wing pale ochreous suffused with fuscous brown especially towards termen; cilia reddish ochreous with a dark line through them; the underside pale ochreous, the costal and terminal areas tinged with purplish pink and irrorated with fuscous, a discoidal spot and sinuous postmedial line with minute black streaks on the veins.

Ab. 1. *alopecura*. Fore wing with the ground-colour uniform red-brown.

Ab. 2. *exstincta*. Much paler; fore wing uniform reddish grey.—W. and E. Turkestan.

Hab. Britain, Leech Coll.; France; Denmark, Leech Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland, Zeller and Frey Colls.; N. Italy; Russia, Livonia, Zeller Coll.; Armenia; W. Siberia, Altai; W. Turkestan, Issyk Kul; E. Turkestan, Kashgar, Korla; Tibet, Kuku-nor, Amdo; E. Siberia, Amurland, Ussuri; Japan, Yokohama (*Lewis*), 1 ♀; W. China, Ta-chien-lu (*Pratt*), 1 ♀. *Exp.* 42–46 millim.

Larva. Meyr. Brit. Lep. p. 131; Barrett, Lep. Brit. iv. p. 370, pl. 179.

Pale rosy grey to reddish brown; dorsal line ochreous whitish, dark-edged; subdorsal line pale; spiracular line broad, pale greyish ochreous, dark-edged above; head reddish brown or dark brown; thoracic plate blackish with whitish lines. Food-plants: Grasses, *Primula*, *Rumex*, etc. 9–4.

2840. Parastichtis vultuosa. (Plate CX. fig. 8.)

Hadena vultuosa, Grote, Proc. Ac. Nat. Sci. Phil. 1875, p. 420; Smith, Cat. Noct. N. Am. p. 134.

Head ochreous, the frons fuscous mixed with grey; antennæ black slightly ringed with grey; tegulæ ochreous with black medial line and fuscous and grey tips; patagia blackish edged above by purplish red; dorsum of thorax ochreous and grey; pectus ochreous; tibiæ and tarsi blackish with pale rings; abdomen ochreous more or less tinged with fuscous, the crests blackish. Fore wing ochreous suffused in parts with rufous and irrorated with black especially on costal area; subcostal and median nervures streaked with black; a wedge-shaped black mark above inner margin near base; subbasal line represented by two oblique striæ from costa and two points on median nervure; antemedial line double at costa, angled outwards below costa to two white points on subcostal nervure, then oblique, waved and angled inwards to double black points on the veins, bent inwards to inner margin; claviform absent; orbicular and reniform with fuscous centres and ochreous annuli slightly defined by blackish, the former very oblique and pointed below, the latter constricted at middle and with white points above and on lower inner edge; traces of a medial line oblique from costa to vein 2, then dentate; postmedial line double

at costa, bent outwards below costa, then dentate and produced to double black points on the veins, oblique below vein 4, some pale points beyond it on costa; subterminal line only defined by the area beyond it being suffused with rufous and black except at apex and the veins of terminal area streaked with black and irrorated with white, angled outwards at vein 7, excurved at middle and strongly angled inwards at discal and submedian folds almost to postmedial line; a terminal series of small black lunules; cilia blackish intersected with ochreous. Hind wing greyish ochreous suffused with fuscous especially on terminal area; an indistinct postmedial line from vein 4 to inner margin defined by greyish on outer side; a fine dark terminal line; cilia ochreous with a fuscous line through them; the underside ochreous irrorated with fuscous, the costal and terminal areas tinged with purplish pink, a discoidal spot, sinuous postmedial line, and traces of diffused subterminal line.

Hab. Canada, Manitoba, Aweme (*Criddle*), 1 ♀, Alberta, Calgary (*Wolley-Dod*), 1 ♂, 3 ♀; U.S.A., Northern, Eastern, Middle and Central States, Massachusetts, New York, Trenton Falls (*Doubleday*), 1 ♀; Evans Center, 1 ♂, 1 ♀ type. *Exp.* 44–46 millim.

2841. **Parastichtis apamiformis.** (Plate CX. fig. 9.)

Xylophasia apamiformis, Guen. Noct. i. p. 137 (1852); Smith, Cat. Noct. N. Am. p. 133.
Hadena contenta, Wlk. xi. 754 (1857).

Head and thorax red-brown mixed with fuscous; palpi blackish at sides; frons with lateral black bars; tarsi banded with black; abdomen greyish brown tinged with fuscous, the dorsal crests and anal tuft rufous. Fore wing greyish brown more or less suffused with purplish red and with slight dark irroration; subbasal line represented by double oblique black striæ from costa and cell; antemedial line rather indistinctly double, oblique, waved, angled inwards on vein 1 and to inner margin; claviform small or moderate, defined by black; orbicular with slight brown centre and pale annulus defined by black, very oblique elliptical; reniform fuscous defined by black with brown bar on inner side and ochreous lunule with striga above and two white points below it on outer side; an indistinct curved dentate medial line; postmedial line indistinctly double, bent outwards below costa, then minutely dentate and with black and white points beyond it on the veins, excurved to vein 4, then oblique, some ochreous points beyond it on costa; subterminal line pale slightly defined on inner side by brown and with blackish patches before it at costa, middle and submedian fold, excurved below vein 7 and at middle, the area beyond it suffused with black except at apex; a terminal series of small black lunules; cilia fuscous intersected with rufous. Hind wing fuscous brown, paler at base, the veins dark; a fine black terminal line; cilia ochreous; the underside ochreous white irrorated

with fuscous, a black discoidal spot, sinuous postmedial line, and diffused subterminal band.

Hab. Canada, Renfrew Co., 1 ♀, Orilla (*Bush*), 1 ♀ type *contenta*; U.S.A., New York (*Doubleday*), 4 ♂ type, Pennsylvania, 1 ♂, New Jersey, Illinois, Colorado. *Exp.* 44–50 millim.

Larva. Head shining pale brown. Body cylindrical, smaller behind, wood-brown, shaded with dark brown, leaving pale dorsal and subdorsal lines and a broad substigmatal one; cervical shield dark brown, cut by a pale line. The dorsal line is strongly bordered by the dark shade.—H. G. D.

2842. Parastichtis multicolora. (Plate CX. fig. 10.)

Hadena multicolor, Dyar, Proc. Ent. Soc. Wash. vi. p. 103 (1904).

♀. Head and tegulæ whitish mixed with dark brown, the latter with blackish medial line and tips, the frons with lateral black bars and vertex of head with blackish bar; thorax red-brown mixed with some grey, the patagia suffused with blackish; pectus and legs whitish mixed with red-brown; abdomen grey-brown, the crests blackish at tips. Fore wing greyish suffused with red-brown and irrorated with fuscous, the medial area darker; subbasal line represented by slight blackish striæ from costa and cell; antemedial line indistinct, double filled in with greyish, oblique, slightly waved, bent inwards to inner margin; claviform hardly traceable, somewhat darker; orbicular pale with very indistinct diffused dark outline, somewhat oblique; reniform with prominent white lunule on outer edge, otherwise hardly traceable, somewhat darker; postmedial line very indistinct, double filled in with greyish, bent outwards below costa, then minutely waved, oblique below vein 4, some whitish points beyond it on costa and a diffused blackish patch in submedian interspace; subterminal line very indistinct, pale, incurved at discal fold and below vein 3, the area beyond it suffused with blackish except towards apex; cilia pale rufous with series of blackish lunules at tips. Hind wing whitish tinged with brown, the terminal area suffused with brown; a faint dark discoidal lunule and fine blackish terminal line; cilia whitish; the underside whitish irrorated with red-brown especially on costal and terminal areas, a dark discoidal lunule, and indistinct diffused sinuous postmedial and subterminal lines.

Hab. Canada, Br. Columbia, Victoria; U.S.A., California (*Wadsingham*), 1 ♀. *Exp.* 46 millim.

2843. Parastichtis plutonia. (Plate CX. fig. 11.)

Hadena plutonia, Grote, Can. Ent. xv. p. 9 (1883); Smith, Cat. Noct. N. Am. p. 135.

♀. Head and thorax black-brown with a leaden gloss and mixed with rufous; frons and vertex of head with black bars; tegulæ rufous at base and with black medial line; tarsi black with pale

rings; abdomen grey-brown, the dorsal crests blackish, the ventral surface ochreous at base. Fore wing fuscous suffused with leaden grey and irrorated with black; a rufous patch at base of costal area and some rufous in discal fold from antemedial to subterminal lines; subbasal line indistinct, double, waved, from costa to submedian fold in which there is a slight black streak; an oblique black streak above inner margin before the antemedial line which is double, waved and retracted to inner margin; claviform small, slightly defined by black; orbicular and reniform with slight whitish annuli defined by black, the former oblique elliptical, the latter constricted at middle, a faint waved medial line; postmedial line indistinctly double, filled in with white at costa, strongly bent outwards below costa, then dentate and produced to black and white points on the veins, very oblique below vein 4, some white points beyond it on costa, the veins beyond the cell irrorated with white scales; subterminal line represented by a series of short black streaks on slight rufous streaks in the interspaces; a terminal series of black points; cilia blackish intersected with whitish. Hind wing ochreous suffused with fuscous brown especially on terminal area; cilia ochreous with slight fuscous line through them; the underside ochreous irrorated with fuscous, the costal area tinged with purplish, a discoidal lunule, sinuous postmedial line, and indistinct diffused subterminal line.

Hab. Canada, Manitoba, Cartwright, 1 ♀, Aweme (*Criddle*), 1 ♀; U.S.A., Maine, Ohio (*G. R. Pilate*), 1 ♀, Wisconsin, New Mexico, Beulah (*Cockerell*), 1 ♂. *Exp.* 40–42 millim.

2844. Parastichtis funerea.

Hadena funerea, Hein. Schmett. Deutsch. i. p. 828 (1859); Snell. Tijds. v. Ent. xl. p. 299, pl. 12. f. 1; Hofm. Gr. Schmett. ed. ii. pl. 39. f. 27; Staud. Cat. Lep. pal. p. 171.

Head and thorax black mixed with purplish red and some grey; frons with lateral black bars; tegulæ with black medial line; patagia with black line near upper edge; tarsi black ringed with pinkish; abdomen fuscous, the lateral fringes and sides of anal tuft purplish, the ventral surface irrorated with purplish. Fore wing fuscous black more or less tinged with purplish; subbasal line represented by double oblique black striæ from costa; a sinuous black streak in base of submedian fold and an oblique streak above inner margin near base; antemedial line indistinctly double, angled outwards below costa, then oblique and slightly waved, retracted to inner margin; claviform narrow or small, defined by black; orbicular very oblique elliptical, defined by black; reniform defined by black with a little white in centre and some white points on upper and outer edges and slight black streaks beyond it in the interspaces; an indistinct curved minutely waved medial line; postmedial line double at costa, bent outwards below costa, then indistinct, minutely dentate, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line indistinct,

reddish, defined on inner side by faint dentate dark marks, excurved below vein 7 and at middle, the area beyond it rather darker except at apex; a terminal series of slight black points; a fine pale line at base of cilia. Hind wing fuscous with a slight greyish tinge; cilia pale brown at base, with fuscous line at middle and whitish tips; the underside whitish irrorated with fuscous, the costal area tinged with purplish, the terminal area suffused with fuscous, a black discoidal spot and curved postmedial line.

Ab. 1. Usually redder and with series of white points beyond postmedial line of fore wing.—Japan, China.

Hab. Holland; N.W. Germany, 1 ♂, 1 ♀; E. Siberia, Ussuri; Japan, Hakodate, 1 ♂, Oiwake (*Pryer*), 3 ♂, 1 ♀, Tokio (*Maries*), 2 ♀, Yokohama (*Jonas*), 1 ♂, 1 ♀; C. China, Kiukiang (*Pratt*), 1 ♀; W. China, Chang-Yang (*Pratt*), 1 ♂, 2 ♀, Washan (*Pratt*), 1 ♂, Chia-kou-ho (*Pratt*), 1 ♀, Ta-chien-lu (*Pratt*), 3 ♂; Kashmir, Narkunda (*McArthur*), 1 ♂; Punjab, Dharmsála (*Hocking*), 1 ♂.

Larva. Kirby, Butt. & Moths Eur. p. 237; Hffm. Raup. p. 96.

Similar to that of *P. rurea*. Food-plants: Grasses.

2845. **Parastichtis boopis**, n. sp. (Plate CX. fig. 12.)

Head and thorax greyish tinged with red-brown and slightly irrorated with black; palpi blackish at sides; frons with lateral black bars; tegulæ with black medial line and black line on prothorax; tarsi black with pale rings; abdomen grey-brown, the crests tipped with black, the anal tuft and ventral surface rufous. Fore wing red-brown slightly irrorated with dark brown, the costal half on antemedial and medial areas suffused with dark brown, a dark brown costal patch on postmedial area and the terminal area dark brown except at apex; subbasal line double, waved, from costa to submedian fold; a slight black streak below base of cell and another above inner margin before the antemedial line, which is indistinct, double, oblique, waved; claviform moderate, defined by black; orbicular rufous defined by black, round or oblique elliptical; reniform defined by black on inner side and with large grey lunule on outer edge defined by black on inner side; an indistinct medial line, oblique from costa to below cell; postmedial line indistinctly double, slightly bent outwards below costa, then minutely dentate and produced to black streaks with grey points on them on the veins, excurved to vein 4, then incurved, some pale points beyond it on the dark costal patch; subterminal line very indistinct, pale, excurved below vein 7 and at middle and angled inwards at discal and submedian folds; a fine waved dark terminal line; cilia chequered greyish and fuscous with punctiform rufous line at base. Hind wing fuscous, the cilia pale rufous; the underside pale rufous irrorated with brown, a black discoidal spot, sinuous postmedial line, and traces of diffused subterminal line.

Hab. W. China, Washan (*Pratt*), 1 ♀; Punjab, Kulu, Sultanpur (*G. Young*), 1 ♀, Dharmsála (*Hocking*), 1 ♂, 4 ♀ type. *Exp.* 40–44 millim.

2846. Parastichtis occidens. (Plate CX. fig. 13.)

Hadena occidens, Grote, Bull. U.S. Geog. Geol. Surv. Terr. iv. p. 177 (1878); Smith, Cat. Noct. N. Am. p. 138.

Head and thorax grey-white mixed with black; frons with black bar; tegulæ with black medial line and rufous tinge at tips; dorsal crest tinged with rufous; pectus whitish, the tarsi fuscous ringed with white; abdomen white irrorated with grey, the dorsal crests brown. Fore wing grey-white irrorated with fuscous, the medial area suffused with rufous except at costa and inner margin, the postmedial area paler except at costa, the veins with slight dark streaks; a slight black streak below base of cell; subbasal line double filled in with white, from costa to submedian fold; antemedial line double filled in with white, oblique from costa to submedian fold, then angled inwards on vein 1; claviform small, defined by fuscous; orbicular and reniform with greyish centres and whitish annuli defined by fuscous, the former oblique elliptical; an indistinct slightly waved medial line; postmedial line indistinctly double filled in with whitish, bent outwards below costa, then somewhat dentate, below vein 4 bent inwards to near origin of vein 2 and oblique to inner margin; subterminal line whitish slightly defined on inner side by fuscous and with blackish mark before it in submedian fold, angled outwards at vein 7, excurved at middle and incurved at discal and submedian folds; a terminal series of small black lunules; cilia white and fuscous with fine white line at base. Hind wing whitish tinged with brown, the veins and a fine terminal line darker; cilia white; the underside white, the costal and terminal areas irrorated with brown, a discoidal lunule and sinuous postmedial line with minute dark streaks on the veins.

Ab. 1. Fore wing with the medial area, and usually the dorsal crest of thorax not tinged with rufous.—Colorado, California.

Hab. U.S.A., Colorado (*Bruce*), 2 ♀, Durango (*Oslar*), 1 ♀, Grand Junction (*Oslar*), 2 ♀, Nevada, 1 ♂ type, California (*Walsingham*), 1 ♀. *Exp.* 46–50 millim.

2847. Parastichtis albina. (Plate CX. fig. 14.)

Hadena albina, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 157 (1874); Smith, Cat. Noct. N. Am. p. 138.

♂. Head and thorax red-brown mixed with blackish and whitish; frons with black bar; tegulæ with slight blackish medial line; dorsal crest whitish; pectus bright rufous; tarsi blackish with pale rings; abdomen rufous, pale at base. Fore wing ochreous irrorated and suffused with red-brown or blackish, the postmedial area more or less distinctly whitish except towards costa and with some bluish white in submedian interspace; subbasal line waved, from costa to submedian fold, defined by ochreous on outer side; some white on inner margin before the antemedial line which is double filled in with greyish, waved, somewhat oblique; claviform large, defined by black except above and with diffused blackish

streak from it to postmedial line; orbicular and reniform large, indistinctly defined by brown, the former rather pale, round, the latter with slight whitish annulus and whitish lunule in centre; an indistinct medial line oblique from costa to below cell, then incurved; postmedial line double filled in with greyish, bent outwards below costa, then dentate, strongly incurved below vein 5, some whitish points beyond it on costa; subterminal line whitish defined on inner side by rufous and with slight dentate black marks before it at middle and in submedian fold, angled outwards at vein 7 and dentate at veins 4, 3, the area beyond it dark except at apex and with black streaks in the interspaces to the waved black terminal line; cilia with ochreous line at base and intersected with ochreous. Hind wing whitish tinged with red-brown, the veins brown, a slight discoidal lunule, sinuous postmedial line and diffused subterminal band; a dark terminal line; cilia ochreous white with brown line through them; the underside with the costal area irrorated with rufous.

♀. Tegulæ white except at tips and with strong black medial line.

Hab. U.S.A., California (*d'Urban*), 1 ♂, Sauzalito, 1 ♂, 1 ♀ type. *Exp.* 52 millim.

2848. Parastichtis castanea. (Plate CX. fig. 15.)

Hadena castanea, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 156 (1874); Smith, Cat. Noct. N. Am. p. 138.
Hadena cymosa, Grote, Papilio, i. p. 34 (1881).

Head and thorax dark purple-brown slightly mixed with greyish, lower part of frons pale with black bar above; tegulæ with blackish medial line and rufous tips; dorsal crest rufous; pectus purplish, the tarsi blackish with pale rings; abdomen pale purplish, greyish at base and with the dorsal crests rufous. Fore wing red-brown suffused with grey and slightly irrorated with black; subbasal line double, waved, from costa to submedian fold; a slight black streak above inner margin before the antemedial line, which is indistinctly double filled in with grey, waved, somewhat oblique; claviform defined by black except above, with slight pale patch beyond it and with strong black streak from its lower extremity to postmedial line; orbicular and reniform defined by black, the former oblique, irregularly elliptical, the latter with straight inner edge, an ochreous lunule on outer edge and two whitish points at lower extremity; an indistinct dentate medial line, oblique from costa to below cell; postmedial line double towards costa, bent outwards below costa, then dentate and produced to black and white points on the veins, excurved to vein 4, then oblique, some white points beyond it on costa; subterminal line ochreous defined by rufous on inner side and with small dentate black marks before it at middle, angled outwards at vein 7 and slightly dentate at veins 4, 3, the area beyond it purplish fuscous except towards apex and with slight black streaks in the interspaces to the waved terminal line; cilia

with fine pale line at base. Hind wing ochreous tinged with brown; the veins and terminal area suffused with brown; a slight discoidal spot, sinuous postmedial line and some whitish on termen towards tornus; cilia ochreous white with a brown line through them; the underside with the costal area irrorated with rufous, the discoidal spot and sinuous postmedial line more distinct.

Ab. 1. Fore wing with the postmedial area paler and more ochreous except towards costa.

Hab. Canada, Vancouver, 1 ♂, 1 ♀, Wellington (*Taylor*), 1 ♀; U.S.A., Washington Terr., 5 ♀ type *cymosa*, California, 2 ♂, 1 ♀ type. *Exp.* 52–56 millim.

2849. Parastichtis arctica.

Hadena arctica, Boisd. Ind. Meth. p. 120 (1840), non descr.; Frr. Neue Beitr. v. p. 19, pl. 394. f. 1 (1842); Herr.-Schäff. Eur. Schmett., Noct. f. 155; Guen. Noct. i. p. 193, pl. 6. f. 9; Smith, Cat. Noct. N. Am. p. 137; Staud. Cat. Lep. pal. p. 173.
Hadena amputatrix, Fitch, 3rd Rep. Ins. N. Y. p. 107 (1859).
Hadena amica, Harr. Inj. Ins. Flint. ed. p. 450, f. 222 (1862).
Eurois pluviosa, Wlk. xxxiii. 725 (1865); Smith, Cat. Noct. N. Am. p. 138.

Head and thorax clothed with deep purple-brown and grey-white scales, the dorsal crest bright rufous; sides of frons with blackish bars; tarsi black ringed with white; abdomen brownish grey, the crests and dorsum towards extremity pale purple. Fore wing deep purple-brown thickly irrorated with grey-white, a patch of ochreous white in submedian interspace before antemedial line, the outer part of postmedial area ochreous white except towards costa; a slight waved subbasal line from costa to submedian fold defined by whitish on outer side; antemedial line double filled in with white, oblique, highly waved; claviform small or moderate, defined by brown with greyish patch beyond it and slight dark streak from it to postmedial line; orbicular and reniform ochreous greyish defined by brown, the former oblique elliptical, the latter with its lower part more or less suffused with fuscous and with one white point at inner angle and two at outer angle; a waved postmedial line oblique from costa to below cell; postmedial line defined by grey on outer side, bent outwards below costa, then dentate and produced to black and white points on the veins, incurved below vein 4, some white points beyond it on costa; subterminal line whitish, angled outwards at veins 7, 6, 4, 3, inwards in discal fold and incurved below vein 3, the area beyond it dark except at apex; a terminal series of small black lunules; cilia with punctiform white line at base. Hind wing grey suffused with brown, the veins and terminal area rather darker; a slight discoidal lunule and sinuous postmedial line, some whitish on termen towards tornus; the underside white, the costal and terminal areas irrorated with brown, a blackish discoidal spot and sinuous postmedial line.

Hab. Labrador, Leech Coll., 1 ♂, 1 ♀; Canada, Renfrew Co.,

1 ♂, 5 ♀, Nova Scotia (*Redman*), 5 ♀, Ottawa (*Gibson, Fletcher, Saunders*), 2 ♂, 5 ♀, Orilla (*Bush*), 1 ♀, Alberta, Calgary (*Wolley-Dod*), 4 ♂, 4 ♀, Br. Columbia, Kaslo (*Cockle*), 1 ♀, Sicamons (*Ricardo*), 1 ♀, Vancouver I. (*Hawkins*), 1 ♀ type *pluviosa*. Wellington (*Taylor*), 1 ♀; U.S.A., Massachusetts, Beverly (*Burg*), 1 ♂, 1 ♀, New York (*Packard*), 1 ♂, 3 ♀, Evans Center (*Grote*), 2 ♂, 2 ♀, Trenton Falls (*Doubleday*), 2 ♂, 1 ♀, Colorado, Glenwood Springs (*Oslar*), 2 ♀, California, Shasta (*Walsingham*), 1 ♂, 1 ♀. *Exp.* 42–50 millim.

2850. Parastichtis leucostigma. (Plate CX. fig. 16.)

Xylophasia leucostigma, Moore, P. Z. S. 1867, p. 51; Hmpsn. Moths Ind. ii. p. 224.
Hadena constellata, Moore, Lep. Atk. p. 130, pl. iv. f. 21 (1882).
Euplexia oxydata, Hmpsn. J. Bomb. N. H. Soc. xiv. p. 199 (1902).

♂. Head and thorax bright ferruginous red mixed with ochreous; tegulæ with faint pale line near tips; patagia with some pale scales near upper edge; dorsum of thorax mostly ochreous; tarsi ringed with ochreous; abdomen ferruginous red. Fore wing bright ferruginous red mixed with some ochreous, the veins with dark streaks irrorated with white; subbasal line represented by double striæ filled in with ochreous from costa and cell; antemedial line double filled in with ochreous, oblique, angled inwards on vein 1 and outwards above inner margin; claviform absent; orbicular with ochreous annulus defined by rufous, round; reniform ill-defined, with pure white lunule on outer side with white point above it and two points below it; an indistinct curved medial line; postmedial line defined by ochreous on outer side, oblique from costa to vein 7, angled outwards at vein 4, then incurved, some ochreous points beyond it on costa; subterminal line formed by reddish ochreous lunules defined by slight dentate dark marks on inner side, angled outwards at vein 7 and slightly excurved at middle; a slight waved dark terminal line; cilia fuscous and rufous with dark line near base. Hind wing uniform reddish brown, the cilia rufous; the underside ochreous, the costal area suffused with rufous, the veins and terminal area with brown, the costal area and veins irrorated with grey, a dark discoidal spot and curved postmedial line.

Hab. Sikhim, 7000′ (*Pilcher*), 1 ♂ type *oxydata*. *Exp.* 50 millim.

2851. Parastichtis purpurina. (Plate CX. fig. 17.)

Euplexia purpurina, Hmpsn. J. Bomb. N. H. Soc. xiv. p. 199 (1902).

♀. Head and thorax purplish red; abdomen ochreous brown, the ventral surface tinged with purplish. Fore wing purplish red; subbasal and antemedial lines hardly traceable; claviform small, faintly outlined in red; orbicular very narrow, oblique elliptical, defined by red; reniform fuscous irrorated with white and faintly

defined by red, somewhat angled inwards on median nervure; an indistinct medial line excurved from costa to median nervure, then oblique; postmedial line indistinct, red, oblique from costa to vein 6, then minutely dentate with series of blackish and white points beyond it on the veins, excurved to vein 4, then incurved, some white points beyond it on costa; faint traces of a pale dentate subterminal line; the veins slightly streaked with fuscous towards termen; a fine pale line at base of cilia. Hind wing yellow-brown, the termen and cilia rufous; the underside greyish ochreous irrorated with brown, the costal area suffused with purplish, a black discoidal spot and sinuous postmedial line.

Hab. Sikhim Tibet, Yatung (*Hobson*), 1 ♀ type. *Exp.* 42 millim.

2852. Parastichtis veterina. (Plate CX. fig. 18.)

Hadena veterina, Led. Verh. z.-b. Wien, 1853, p. 370, pl. 2. f. 4; Staud. Cat. Lep. pal. p. 174.
Hadena haelsseni, Græs. Berl. ent. Zeit. 1889, p. 254; Staud. Cat. Lep. pal. p. 174.
Hadena mandschurica, Staud. Rom. Mém. vi. p. 438 (1892).

♀. Ochreous tinged with rufous; head and thorax irrorated with black; frons with lateral black bars; tarsi banded with black; anal tuft rufous. Fore wing irrorated with rufous and a few fuscous scales; subbasal line represented by two black striæ from costa and one from cell; antemedial line indistinctly double, angled outwards below costa, then waved, oblique to submedian fold, then erect and with black points before it on the veins; lower edge of claviform represented by a slight brown streak; orbicular and reniform large, slightly defined by rufous and with slight rufous centres, the former oblique elliptical; the extremity of median nervure streaked with blackish; medial line black, dentate, oblique from costa to vein 2; postmedial line indistinctly double, bent outwards below costa, then minutely dentate and with a double series of black points beyond it on the veins, excurved to vein 4, then incurved, some slight ochreous points beyond it on costa; subterminal line ochreous defined by rufous on inner side, excurved below vein 7 and at middle, the area beyond it suffused with brown except at apex and the veins streaked with fuscous; a terminal series of small black lunules; cilia fuscous with some rufous at base. Hind wing pale ochreous suffused with fuscous especially on terminal half; a pale curved postmedial line; an ochreous subterminal line from vein 3 to tornus, angled outwards at vein 2; cilia rufous; the underside ochreous tinged with rufous and irrorated with fuscous, a black discoidal spot, sinuous postmedial line, and diffused subterminal band.

Ab. 1. *haelsseni*. Larger, darker and more strongly marked.—Amurland.

Hab. W. Siberia, Altai; E. Siberia, Amurland, Raddefka, 1 ♀. *Exp.* 48 millim. Type † ♀ *haelsseni* in Coll. Püngeler.

2853. Parastichtis rorulenta. (Plate CX. fig. 19.)

Xylophasia rorulenta, Smith, Psyche, xi. p. 55 (1904).

Head and thorax grey irrorated with dark brown and slightly tinged with rufous; palpi blackish at sides; frons with lateral black bars; tegulæ with slight dark line near tips; tarsi blackish with pale rings; abdomen grey suffused with fuscous brown, the crests blackish at tips, the anal tuft tinged with rufous. Fore wing pale violaceous grey with slight black irroration, the costal half suffused with rufous; subbasal line indistinct, double, waved, from costa to vein 1; antemedial line indistinct, double, oblique, waved; claviform faintly defined by rufous above; orbicular defined by rufous at sides, large, round; reniform with its centre suffused with fuscous and greyish annulus slightly defined by rufous, more or less broken up into points; an indistinct waved medial line, oblique from costa to below cell; postmedial line very indistinct, defined by grey on outer side and with series of black points beyond it on the veins, bent outwards below costa, somewhat incurved at discal fold and incurved below vein 4, some white points on a diffused fuscous patch beyond it on costa; subterminal line very indistinct, defined on inner side by the dark costal patch, then by a series of black marks, larger at discal and submedian folds, waved, excurved below vein 7 and at middle and angled inwards at discal and submedian folds, the area beyond it suffused with blackish except at apex and tornus; a terminal series of rather triangular black spots; ciliæ ochreous brown chequered with fuscous. Hind wing greyish tinged with ochreous and suffused with fuscous especially on terminal area; cilia whitish tinged with pale rufous; the underside greyish tinged with rufous and irrorated with fuscous, a black discoidal spot and rather diffused sinuous postmedial line.

Hab. Canada, Manitoba, Aweme (*Criddle*), 1 ♂, Winnipeg, Alberta, Calgary (*Wolley-Dod*), 3 ♀; U.S.A., New York, Sharon (*Meske*), 1 ♀, Colorado, Denver. *Exp.* 42–44 millim. This is probably an aberration of *P. suffusca*.

2854. Parastichtis suffusca. (Plate CX. fig. 20.)

Hadena suffusca, Morr. Proc. Ac. Nat. Sci. Phil. 1875, p. 61; Smith, Cat. Noct. N. Am. p. 133.

Head and thorax grey suffused with purplish red; sides of palpi and frons blackish, tegulæ with slight dark medial line; patagia with some black scales near upper edge; the dorsal crest mixed with blackish; abdomen grey irrorated with brown, the anal tuft and ventral surface tinged with rufous, the dorsal crests blackish. Fore wing pale to deep purplish grey, the costal area suffused with rufous, extending in some specimens on basal and medial areas to submedian fold, the inner area with some dark irroration; subbasal line represented by slight striæ from costa and cell; antemedial line indistinct, double, waved, oblique, bent inwards to inner margin; claviform faintly defined by brown; orbicular and reniform with

grey annuli defined by brown, the former elliptical, somewhat oblique, the latter filled in with fuscous; an indistinct waved medial line; postmedial line bent outwards below costa, then minutely dentate and produced to a double series of black points on the veins, excurved to vein 4, then incurved, some whitish points beyond it on costa; subterminal line indistinct, pale, with blackish spots on inner side at discal and submedian folds and sometimes a series of slight dentate brown marks, excurved below vein 7 and at middle, the area beyond it usually more or less suffused with fuscous except at apex; a terminal series of small black lunules; cilia with a slight pale line at base. Hind wing greyish suffused with ochreous brown, the terminal area with fuscous; cilia ochreous white with a brown line through them except towards tornus; the underside grey, the costal area tinged with purplish and irrorated with fuscous, a black discoidal spot and sinuous postmedial line.

Hab. Canada (*Norman*), 2 ♂, 1 ♀, Manitoba, Cartwright (*Heath*), 3 ♂, Alberta, Calgary (*Wolley-Dod*), 1 ♂, 1 ♀; U.S.A., South to Texas, Massachusetts, New York, Evans Center (*Grote*), 1 ♂, 1 ♀, Colorado. *Exp.* 42–48 millim.

Genus **EURABILA.**

Type.

Eurabila, Butl. Ill. Het. B. M. vii. p. 39 (1889) ..... *lignea.*

Proboscis fully developed; palpi obliquely upturned, moderately scaled, the 2nd joint reaching about middle of frons, the 3rd short; frons smooth; eyes large, round; antennæ of male ciliated and somewhat laminate; head and thorax clothed chiefly with scales, tegulæ produced to a slight dorsal ridge, thorax with single broad ridge-like dorsal crest; tibiæ moderately fringed with hair; abdomen with complete series of dorsal crests, the crests on 3rd and 4th segments large, some rough hair at base and lateral fringes of hair. Fore wing triangular, the apex rounded, the termen crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

2855. Eurabila lignea.

Eurabila lignea, Butl. Ill. Het. B. M. vii. p. 40, pl. 128. f. 6 (1889); Hmpsn. Moths Ind. ii. p. 210.

Head fuscous and white mixed; tegulæ and patagia purple with a few white scales, the dorsal ridge ochreous; pectus and legs grey and fuscous mixed; tarsi with pale rings; abdomen ochreous suffused with red-brown except at base. Fore wing ochreous white mostly suffused with rufous, the costal area whitish suffused with fuscous to subterminal line, the median nervure and veins 4, 3, 1 finely streaked with white; a slight whitish streak in base of submedian fold; subbasal line defined on each side by whitish, angled outwards below costa, then oblique and ending at submedian fold, some reddish beyond its lower extremity followed by a rufous band from submedian fold to inner margin; antemedial line double, rufous filled in with white, waved, oblique from costa to submedian

fold; claviform defined by rufous, acute at extremity; orbicular and reniform narrow with rufous centres and white annuli defined by deep rufous, the former oblique, open below, the latter with white discoidal line in middle; medial line rufous, oblique from costa to median nervure, then waved; postmedial line rufous defined by white on outer side, bent outwards below costa, then waved, excurved to vein 4, then oblique, some white points beyond it on

Fig. 17.—*Eurabila lignea*, ♂. ½.

costa; subterminal line white defined by rufous on inner side, waved, angled outwards at vein 7 and excurved at middle; terminal area with purple marks irrorated with white at extremities of veins except towards apex, with black lunules between them; cilia black with fine pale line at base and ochreous patches at and below apex. Hind wing ochreous tinged with fuscous; the underside with the costal area faintly tinged with red and irrorated with black, a discoidal lunule and faint curved postmedial line.

Hab. PUNJAB, Kulu, Sultanpur (*G. Young*), 2 ♂, Dharmsála (*Hocking*), 3 ♂, 2 ♀ type. *Exp.* 46–52 millim.

Genus EUPLEXIDIA.

Euplexidia, Hmpsn. Moths Ind. iv. p. 461 (1896); Swinh. A. M. N. H. (6) xix. p. 165 (1897) ..... Type. *noctuiformis*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching vertex of head and moderately scaled, the 3rd oblique; frons smooth; eyes large, round; antennæ of male minutely ciliated; head and thorax clothed chiefly with scales, the pro- and metathorax with divided crests, tibiæ moderately fringed with hair; abdomen with dorsal crests on basal segments. Fore wing rather narrow, the apex rounded, the termen slightly crenulate; vein 3 from close to angle of cell; 5 almost straight from just below middle of discocellulars; 6 from upper angle; 9, 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 stalked; 8 anastomosing with the cell near base only.

2856. Euplexidia noctuiformis.

Euplexidia noctuiformis, Hmpsn. Moths Ind. iv. p. 461 (1896); Swinh. A. M. N. H. (6) xix. p. 165 (1897).

♂. Head and thorax clothed with pale rufous and whitish scales; frons with blackish bars at sides and brown bar above; tegulæ with diffused black band near tips; tarsi blackish ringed with white; abdomen pale rufous, the dorsal crests blackish.

Fore wing pale rufous suffused in parts with violaceous, sparsely irrorated with black, the costal area irrorated with pale yellow; subbasal line represented by black striæ from costa and cell defined by yellowish on outer side; antemedial line with black striga from costa, then indistinct, diffused, interrupted, oblique to above inner margin where it is angled outwards; claviform large, strongly defined by black and with black streak from its lower extremity to a black lunule below angle of cell; orbicular represented by a black line on its outer edge connected with the costa by a bar; reniform with its centre slightly and incompletely defined by black with traces of a yellowish annulus outside it; postmedial line double at

Fig. 18.—*Euplexidia noctuiformis*, ♂. ¾.

costa, then very indistinct, bent outwards below costa, then incurved and at vein 4 bent inwards to lower angle of cell and the black lunule below it, the area beyond it suffused with violaceous, some pale points on costa; subterminal line formed of small yellowish lunules, excurved below vein 7 and at middle; a terminal series of small black lunules defined by yellowish on inner side; cilia chequered rufous and fuscous. Hind wing white, the veins and inner area tinged with pale rufous; a brown terminal line and line near base of cilia; the underside with the costal area irrorated with rufous, a small discoidal spot and crenulate postmedial line, oblique and obsolescent below vein 6.

Hab. Assam, Khásis, 1 ♂ type. *Exp.* 38 millim.

Genus **CHECUPA**.

Type.

Checupa, Moore, P. Z. S. 1867, p. 60 ..... *fortissima*.

Proboscis fully developed; palpi upturned, the 2nd joint thick, hardly reaching middle of frons and smoothly scaled, the 3rd short; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed chiefly with scales, the pro- and metathorax with small divided crests; tibiæ thickly fringed with long hair in male; abdomen dorsally flattened and with small crests on two basal segments and lateral fringes of hair, the male with large ventral tuft of hair from base and paired lateral tufts from penultimate segment. Fore wing very long and narrow, the apex rounded, the termen obliquely curved and crenulate, the cell clothed with long hair on underside; veins 3 and 5 from near angle of cell; 6 from below upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper

angle; 8 anastomosing with the cell near base only; male with some long hair on upperside in cell and on inner area, on underside with fringes of hair from basal half of costa, median nervure and base of vein 4 and submedian fold.

A. Fore wing without black streak from reniform to termen... *fortissima.*
B. Fore wing with black streak from reniform to termen ..... *nigrostrigata.*

2857. Checupa fortissima.

Checupa fortissima, Moore, P. Z. S. 1867, p. 60, pl. 6. f. 5; Hmpsn. Moths Ind. ii. p. 229.

Head and thorax sap-green tinged with olive-brown; tegulæ with brown annuli surrounded by elliptical brown marks; patagia with dark brown line near edges; mesothorax with two pairs of small brown spots with tufts of whitish hairs between them; metathorax with whitish mark; tibiæ with some black points; tarsi rufous; abdomen red-brown with the ventral surface ochreous. Fore wing sap-green slightly irrorated with black; subbasal black spots on costa and below cell, the latter with curved black mark

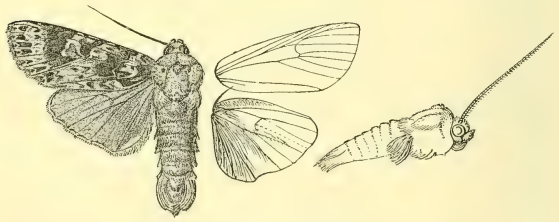


Fig. 19.—*Checupa fortissima*, ♂. ½.

beyond it; a black-brown fascia on basal part of inner margin with a black spot above vein 1 at its extremity; antemedial line very oblique, sinuous, with black band beyond it from costa to median nervure; claviform large, black; orbicular and reniform green with slight whitish annuli with black before and between them in cell, the former quadrate, open above and below, and with two black points in it, the latter with its lower extremity produced, some blackish in lower part and black points towards outer edge, the area beyond it suffused with black; a dentate medial line from cell to inner margin; postmedial line indistinct, black, double towards costa, bent outwards below costa, then dentate and produced to black and white points on the veins, excurved to vein 4, then incurved, some white points beyond it on costa and an oblique series of small U-shaped black marks, larger towards costa; subterminal line formed by a series of white lunules with black dentate spots beyond them extending to the terminal series of small black and white spots; a Y-shaped white mark above tornus filled in with black; cilia greenish at base, chequered black and white at

tips. Hind wing dark red-brown with darker terminal line; cilia whitish, the underside whitish suffused with red-brown, the costal area with dark irroration, a large brown discoidal spot and rather diffused waved postmedial line.

Hab. Sikhim (*Dudgeon*), 1 ♂, 1 ♀ type. *Exp.* 58 millim.

*2858. Checupa nigrostrigata. (Plate CX. fig. 21.)

Bagada nigrostrigata, Beth.-Baker, Nov. Zool. xiii. p. 209 (1906).

♀. Head and thorax pale ochreous tinged with rufous; palpi with some black-brown at side of 2nd joint; antennæ black-brown except basal joint; tegulæ with black-brown tips; tarsi black-brown with pale rings; abdomen pale ochreous tinged with brown. Fore wing pale ochreous suffused in parts with rufous especially on postmedial area except towards costa; vein 1 on medial area, the costal area towards apex, and the medial part of terminal area tinged with sap-green; subbasal line represented by a dark point on costa, the antemedial line by a dark point on costa, then by slight striæ in the interspaces, bent outwards below costa; claviform absent; orbicular with very faint pale annulus, elliptical; reniform whitish tinged with green, defined by black below, oblique elliptical, with an irregularly quadrate black patch before it in upper part of cell with an oblique blackish bar from it to costa, a black streak from reniform to termen below vein 4; postmedial line very indistinct, pale, with black point at costa, bent outwards below costa, then defined by slight dark striæ on inner side, excurved to vein 4, then incurved, some pale points beyond it on costa with slight brown streaks between them; subterminal line whitish slightly defined by brown on inner side, excurved below vein 7 and at middle; a terminal series of minute brown lunules; cilia red-brown with series of small black spots at tips. Hind wing whitish suffused with red-brown; cilia whitish with brown line near base; the underside whitish suffused with brown, an indistinct diffused curved postmedial line and traces of subterminal shade.

Hab. Br. N. Guinea, Dinawa (*Pratt*), type † ♀ in Coll. Bethune-Baker. *Exp.* 42 millim.

Genus **TRACHEA**.

	Type.
Trachea, Ochs. Schmett. Eur. iv. p. 75 (1816), non descr.; Treit. Schmett. Eur. v. (2) p. 65 (1825)	*atriplicis.*
Phosphila, Hübn. Verz. p. 208 (1827)	*turbulenta.*
Hama, Steph. Ill. Brit. Ent. Haust. iii. p. 4 (1829)	*anceps.*
Berrhæa, Wlk. xv. 1721 (1858)	*aurigera.*
Chandata, Moore, Lep. Atk. p. 113 (1882)	*partita.*
Epa, Beth-Baker, Nov. Zool. xiii. p. 192 (1906)	*pratti.*
Achatia, Hübn. Tent. ined.	*atriplicis.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons, the 3rd short and blunt; frons smooth; eyes large, round; head and thorax clothed chiefly with scales, the vertex of head with ridge of scales, the pro- and metathorax with divided crests; tibiæ fringed with long hair; abdomen with dorsal series of crests. Fore wing broad, the apex rounded, the termen crenulate; veins 3 and 5 from close to angle of cell;

6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3 and 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base only.

Sect. I. (*Chandata*). Antennæ of male bipectinate with long branches, the apex simple.

A. Fore wing bluish white with black markings ..... *partita.*
B. Fore wing grey suffused with fuscous and purplish red... *illocata.*

2859. Trachea partita.

Chandata partita, Moore, Lep. Atk. p. 114, pl. 4. f. 16 (1882); Hmpsn. Moths Ind. ii. p. 222.

Head and thorax white; palpi except towards tips, sides of frons, antennæ and some scales between them, tips of tegulæ and some scales at middle, edges of patagia and sides of metathorax, and prothoracic crest black; pectus and legs fuscous black, the tibiæ and tarsi ringed with white; abdomen fuscous black, the dorsal crests deep black. Fore wing bluish white; subbasal line represented by black striæ from costa and cell; a black patch on basal inner area, followed by a black band, oblique from costa to median nervure, then incurved, sometimes interrupted below costa; antemedial line expanding into a wedge-shaped spot at costa, angled outwards below costa, then oblique, sinuous; claviform slightly defined by black at extremity; orbicular and reniform white, conjoined on median nervure, undefined above and below, defined by

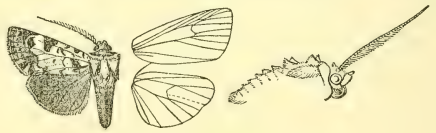


Fig. 20.—*Trachea partita*, ♂. ½.

a black bar on inner side of orbicular which is elliptical and by black patches before and between them, a white patch on costa above orbicular; a slight, oblique, dentate medial line from cell to inner margin; postmedial line defined on outer side by a triangular black patch from costa with white points on costa, then obsolescent, bent outwards below costa, excurved to vein 4, then oblique, waved; subterminal line obsolescent and slightly waved from costa to vein 2 where it is bent inwards, then erect to inner margin with a brown spot before it below vein 2 and a black spot beyond it above tornus; a terminal series of black striæ; cilia white intersected with black. Hind wing fuscous black, the cilia chequered with white except towards apex; the underside with the inner area pale, a few white scales on costal area and some diffused scales before termen, traces of a discoidal lunule and curved postmedial line.

Hab. Sikhim (*Pilcher*), 1 ♂, 1 ♀. *Exp.* 34 millim.

2860. **Trachea illocata.** (Plate CX. fig. 22.)

Hadena illocata, Wlk. xi. 758 (1857); Smith, Cat. Noct. N. Am p. 164.
Dryobota stigmata, Grote, Check List Noctuidæ, p. 23 (1876).

Head and thorax dark brown mixed with white, rufous or purple-red and some black scales; frons with black bar; tegulæ with black medial line; pectus clothed with pale brown and grey hair; the tarsi blackish with pale rings; abdomen grey irrorated with fuscous, the dorsal crests black, the lateral fringes rufous or purplish. Fore wing grey irrorated and suffused with fuscous and tinged with purplish red especially below the cell, the veins slightly streaked with black; a small tuft of black and white scales at base; subbasal line double, from costa to submedian fold, in which there is a short black streak and another on base of inner margin; antemedial line black defined by grey on inner side, angled outwards below costa, then excurved and angled inwards on vein 1; claviform moderate, more or less incompletely defined by black and with black streak from it to postmedial line; orbicular grey irrorated with white and defined by black, somewhat oblique elliptical; reniform large, white defined by black and its centre by fuscous or with its inner part grey; a blackish medial line, oblique from costa to below cell; postmedial line double, strongly bent outwards below costa, then strongly dentate, incurved below vein 3, some white points beyond it on costa; subterminal line whitish slightly defined on each side by brown, angled outwards at vein 7 and excurved at middle; a terminal series of black lunules; cilia fuscous and grey. Hind wing grey with a cupreous tinge and more or less completely suffused and irrorated with fuscous; a discoidal lunule, sinuous postmedial line, and diffused subterminal band; a terminal series of black striæ; the underside whitish, the costal and terminal areas slightly tinged with purplish and irrorated with fuscous, a discoidal spot, sinuous postmedial line, and diffused subterminal band.

Hab. Ignotus, 1 ♂ type; Canada, Ottawa (*Young*), 2 ♂; U.S.A., Eastern, Middle, and Central States, Massachusetts, New York, 1 ♂, 1 ♀ type *stigmata*, Center (*Lintner*, *Hill*), 2 ♂, 2 ♀, Colorado. *Exp.* 42–44 millim.

Sect. II. Antennæ of male bipectinate with short branches, the apex serrate.

A. Fore wing green suffused in parts with red-brown, the postmedial line silvery blue ..... *cyanelinea.*
B. Fore wing whitish irrorated with brown and suffused in parts with olive-yellow ..... *subviridis.*

2861. **Trachea cyanelinea.** (Plate CX. fig. 23.)

Euplexia cyanelinea, Hmpsn. Moths Ind. ii. p. 222 (1894).

♂. Head and thorax olive-brown, some of the hairs tipped with black and white; palpi, frons, and antennæ dark brown; tibiæ and

tarsi fuscous brown ringed with white; abdomen dark brown, the anal tuft pale brown. Fore wing sap-green slightly tinged with brown, the subbasal, medial, and postmedial areas mostly suffused with deep red-brown; the veins streaked with brown with some silvery blue scales near base and towards extremity of median nervure; the diffused subbasal brown band not reaching inner margin; antemedial line silvery blue, angled outwards below costa, then oblique, waved; claviform absent; orbicular and reniform large, green, rather quadrate, the former with brown centre irrorated with silvery blue scales and connected with a hemispherical green spot below the cell, the latter somewhat angled inwards on median nervure, the centre tinged with brown and its lower part suffused with brown; postmedial line silvery blue except towards costa where it is pale, strongly bent outwards below costa, then dentate; excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line only defined by the contrast between the brown and green areas, dentate, angled outwards at veins 7, 4, 3, 2, and at inner margin; cilia olive-green and blackish intersected with white. Hind wing fuscous brown, a diffused greenish white postmedial line from vein 2 to inner margin and indistinct diffused subterminal band; cilia chequered brown and white; the underside greenish white thickly irrorated with fuscous brown, a dark discoidal lunule and indistinct diffused postmedial and subterminal bands.

Hab. Sikhim, Tonglo, 10,000′ (*Elwes*), 1 ♂ type. *Exp.* 44 millim.

2862. **Trachea subviridis.**

Plataplecta subviridis, Butl. Ill. Het. B. M. ii. p. 32, pl. 31. f. 3 (1878).

Head and thorax reddish ochreous slightly mixed with brown, the dorsum of thorax greyish; edges of patagia with some black scales; fore tibiæ and the tarsi brown ringed with white; abdomen

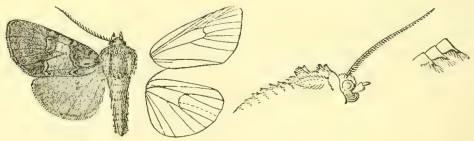


Fig. 21.—*Trachea subviridis*, ♂. ½.

reddish ochreous, the dorsal crests brown. Fore wing whitish suffused in parts with olive-yellow, especially on postmedial area except towards costa and inner margin and slightly irrorated with brown, the inner margin whitish on medial area; subbasal line double, waved, filled in with whitish below the cell and ending at submedian fold, a brown patch beyond it on costal area; antemedial line double, filled in with whitish from cell to inner margin,

excurved below costa and above inner margin and incurved below cell; claviform defined by a few black scales; orbicular and reniform large, incompletely defined by black, the former round, the latter more strongly defined on inner side; a slight oblique striga from costa to reniform; postmedial line double filled in with white towards costa and below vein 2, bent outwards below costa, then minutely waved, bent outwards at vein 6, excurved to vein 4, then incurved, some whitish points beyond it on costa and a dark patch in submedian interspace; subterminal line ochreous slightly defined by brown on inner side, minutely waved and slightly angled inwards at discal and submedian folds; a terminal series of small black lunules defined on inner side by slight whitish lunules; cilia with a brown line through them. Hind wing ochreous suffused with reddish brown; a faint curved postmedial line, diffused dark subterminal band, and fine blackish terminal line; cilia brown at base, whitish at tips; the underside whitish tinged and irrorated with red-brown, a diffused dark subterminal band.

Ab. 1. Fore wing with the medial area suffused with fuscous grey.

Hab. Japan, Yokohama (*Jonas*, *Pryer*), 1 ♂, 4 ♀ type, Satsuma (*Leech*), 1 ♀; C. China, Kiukiang (*Pryer*), 1 ♀; W. China, Chang Yang (*Pratt*), 2 ♀, Ni-tou, 1 ♀. *Exp.* 38–46 millim.

Sect. III. Antennæ of male serrate and fasciculate.

A. Fore wing bluish white with black markings ..... *bella.*
B. Fore wing not bluish white.
a. Fore wing with the subterminal line green expanding into a patch on inner area ..... *hastata.*
b. Fore wing with the subterminal line not green.
a^1. Fore wing with black fascia on medial area in submedian fold ..... *repetita.*
b^1. Fore wing without black fascia on medial area in submedian fold.
a^2. Fore wing red-brown, the postmedial area pale except towards costa..... *fasciculata.*
b^2. Fore wing grey irrorated with fuscous and with patches of olive-green ..... *stoliczcæ.*

2863. **Trachea bella.** (Plate CX. fig. 24.)

Lamprosticta bella, Butl. Trans. Ent. Soc. 1881, p. 183; Staud. Cat. Lep. pal. p. 185.
Euplexia græseri, Staud. Rom. Mém. vi. p. 462, pl. 7. f. 7 (1892).

Head white; palpi except at tips, a bar across frons, antennæ and two streaks on vertex of head black; tegulæ white with black tips; patagia white with black edges; thorax black with white dorsal streak; pectus and legs black, the tibiæ and tarsi ringed with white; abdomen black-brown. Fore wing white with a faint bluish tinge; subbasal line represented by black striæ from costa and cell, angled inwards above vein 1; a black patch on base of inner area with two small black spots beyond it; a black patch on costa followed by a brown band to just above inner margin, excurved at middle,

where there is a black spot on its inner edge followed by the fine black antemedial line excurved from costa to submedian fold, then incurved and with black spot at inner margin; claviform with triangular black mark at base, its extremity slightly defined by black; medial area black, the orbicular and reniform white, the former elliptical defined by black at sides only and conjoined to a white patch on costa and a very large and irregular patch from cell to inner margin, the latter oblique oblong with some black in centre; postmedial line double filled in with white, bent outwards below costa and oblique below vein 6, defined by brown on outer side followed by a triangular black patch on costal area with some white points on costa; a rather triangular black patch just before middle of termen and oblique patch from vein 2 to above tornus bisected by a white streak; cilia black intersected with white. Hind wing black-brown with whitish point on vein 2 just before termen; cilia white-tipped at middle, wholly white towards tornus; the underside whitish tinged with brown, the costal area broadly suffused with brown and irrorated with white, a slight discoidal lunule, curved postmedial line, and diffused subterminal line.

Hab. E. Siberia, Ussuri; Japan, Yesso (*Pryer*), 1 ♂, 2 ♀, Tokio (*Maries*), 1 ♂ type. *Exp.* 30 millim.

2864. Trachea fasciculata. (Plate CX. fig. 27.)

Apamea fasciculata, Leech, Trans. Ent. Soc. 1900, p. 65.

♂. Head and thorax reddish brown with some grey and black scales; palpi blackish at sides; tarsi with pale rings; abdomen grey-brown. Fore wing reddish brown slightly suffused with fuscous and irrorated with black; subbasal line double filled in with whitish, waved, from costa to submedian fold; antemedial line double filled in with whitish, oblique, waved; claviform small, defined by slight black streaks above and below; orbicular and reniform whitish defined by black, the tornus oblique elliptical, the latter open above and below; traces of an oblique sinuous medial line from lower angle of cell to inner margin; postmedial line double filled in with whitish, bent outwards below costa, excurved to vein 5, then oblique and minutely waved, a dark patch beyond it on costal area with some pale points on costa; subterminal line indistinct, waved, excurved at middle; a terminal series of slight black lunules; cilia with fine pale line at base. Hind wing greyish uniformly suffused with brown; a fine waved dark terminal line; the underside with small black discoidal spot and indistinct curved postmedial line.

Hab. W. China, Moupin (*Kricheldorf*), 3 ♂ type. *Exp.* 34 millim.

2865. Trachea hastata. (Plate CX. fig. 25.)

Hadena hastata, Moore, Lep. Atk. p. 130, pl. 4. f. 20 (1881); Hmpsn. Moths Ind. ii. p. 199.

♂. Head and thorax purplish red-brown mixed with some pale ochreous; palpi with the 2nd joint black at sides; tegulæ black in front; metathoracic crest black; tarsi black ringed with ochreous; abdomen brownish grey irrorated with fuscous. Fore wing purple-brown tinged with fuscous in places; subbasal line black defined by greyish on outer side, sinuous, from costa to submedian fold; an irregular oblique green band from below median nervure before antemedial line to inner margin; antemedial line black defined by greyish on inner side, curved, minutely waved; claviform suffused with black and defined by black towards extremity which is acute; orbicular and reniform with brown centres and pale rufous annuli incompletely defined by black, the former very oblique elliptical; an oblique black striga from costa to reniform and indistinct incurved line from lower angle of cell to inner margin; postmedial line double, filled in with green at costa and below vein 2, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line green slightly defined on each side by blackish, excurved below vein 7 and at middle, then incurved and expanding into a patch on inner area; a terminal series of small black lunules; cilia dark brown with pale lines at base and middle. Hind wing whitish tinged with brown, the veins and terminal area suffused with brown; a dark discoidal lunule and fine dark terminal line; cilia white with dark line through them and dark tips; the underside whitish irrorated with fuscous, the apical area tinged with purplish red, a large black discoidal spot, curved minutely waved postmedial line, and terminal series of small lunules.

Hab. Sikhim; Assam, Khásis, 1 ♂. *Exp.* 30 millim.

2866. Trachea repetita. (Plate CX. fig. 26.)

Apamea repetita, Butl. Cist. Ent. iii. p. 133 (1885).
Agrotis conjuncta, Leech, Trans. Ent. Soc. 1900, p. 32.

Head, thorax, and abdomen white mixed with some rufous. Fore wing white suffused in parts with rufous especially on basal half; subbasal line double filled in with whitish, waved, from costa to submedian fold; antemedial line angled outwards below costa, then waved and somewhat oblique; claviform defined by blackish and with black streak from it to postmedial line; orbicular and reniform white defined by black, the former round or rather oblique, open above, the latter defined on inner side only; a slight dentate medial line; postmedial line indistinct, red-brown, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some white points beyond it on costa; the postmedial area

white except towards costa; subterminal line white defined on inner side by slight dentate rufous marks, excurved below vein 7 and at middle, the area beyond it brown except at apex; a terminal series of small black lunules; cilia brown with a fine white line at base. Hind wing white tinged with brown; the underside white irrorated with brown, a discoidal point, faint curved postmedial line, and fine terminal line.

Hab. Japan, Yokohama (*Pryer*), 2 ♀ type; W. China, Omei-shan, 2 ♂ type *conjuncta*. *Exp.* ♂ 32, ♀ 34 millim.

2867. Trachea stoliczcæ.

Mamestra stoliczkæ, Feld. Reis. Nov. pl. 109. f. 32 (1874); Hmpsn. Moths Ind. ii. p. 214.

Head and thorax grey mixed with fuscous; vertex of head, tegulæ, and patagia with olive-green patches, the tegulæ with slight medial black line, the patagia with some black scales near upper edge; the tarsi with slight pale rings; abdomen grey irrorated with fuscous, the crests blackish at tips. Fore wing grey irrorated with fuscous and with patches of olive-green on basal and terminal areas, the medial area suffused with olive-green except towards costa and inner margin; subbasal line represented by double black striæ from costa and cell filled in with grey; antemedial line defined by grey on inner side, angled outwards below costa, then oblique, waved, angled inwards at vein 1 and to inner margin; claviform small, slightly defined by black; orbicular and reniform whitish slightly defined by black, and their centres irrorated with

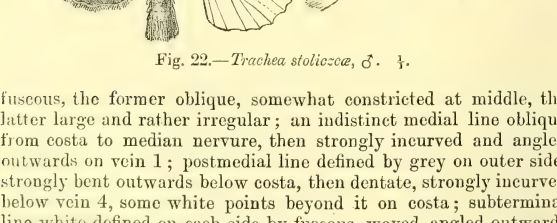


Fig. 22.—*Trachea stoliczcæ*, ♂. ½.

fuscous, the former oblique, somewhat constricted at middle, the latter large and rather irregular; an indistinct medial line oblique from costa to median nervure, then strongly incurved and angled outwards on vein 1; postmedial line defined by grey on outer side, strongly bent outwards below costa, then dentate, strongly incurved below vein 4, some white points beyond it on costa; subterminal line white defined on each side by fuscous, waved, angled outwards at vein 7 and excurved at middle, then incurved, a terminal series of black points and fine waved line; cilia with a slight pale line at base. Hind wing fuscous, the basal half rather paler; cilia fuscous with slight pale line at base and whitish tips; the underside

whitish irrorated with fuscous, a small black discoidal spot and sinuous postmedial line.

Hab. Kashmir, Scinde Valley, 2 ♂, Goorais Valley (*Leech*, *Thompson*), 2 ♂; Punjab, Dalhousie (*Harford*), 9 ♂, Murree (*Harford*), 1 ♂, Thundiani (*Yerbury*), 4 ♂, 1 ♀. *Exp.* 50–54 millim.

Sect. IV. Antennæ of male with fasciculate cilia.

A. Fore wing with irregular black subterminal band from below apex to above tornus ..... *distorta.*
B. Fore wing without irregular black subterminal band.
  a. Fore wing with black patch at tornus.
    a^1. Fore wing with wedge-shaped black patch at tornus with lunule above it ..... *melanoleuca.*
    b^1. Fore wing with oblique quadrate black patch at tornus.
      a^2. Fore wing with black annulus in end of cell ..... *melanodonta.*
      b^2. Fore wing with quadrate black patch with oblique white mark on it in end of cell..... *melanobasis.*
      c^2. Fore wing with the reniform large with greenish annulus on inner side and below and large white lunule on outer edge ..... *atritornea.*
  b. Fore wing without black patch at tornus ..... *toxaridia.*

2868. **Trachea distorta.** (Plate CX. fig. 28.)

Euplexia distorta, Moore, P. Z. S. 1881, p. 354, pl. 38. f. 18; Hmpsn. Moths Ind. ii. p. 218.

♀. Head and thorax black; palpi with the extremity of 2nd joint and 3rd joint white; head with some white at base of antennæ and behind; shaft of antennæ white at base; tegulæ with broad white tips; patagia with triangular patches of white; vertex of thorax with white streak; tibiæ and tarsi ringed with white; abdomen fuscous black with some white hair at base. Fore wing black; a white point at base; a waved subbasal white band from costa to vein 1, above which it is connected by a curved white mark with the antemedial band, which is oblique from costa to median nervure, then incurved, emitting short irregular white fasciæ below median nervure and on inner margin; orbicular defined at sides by a few white scales; reniform white, oblique oblong, angled inwards on median nervure; postmedial line an irregular white band, confluent with upper edge of reniform, oblique to vein 6, excurved to vein 4, bent inwards to lower edge of reniform, forking above inner margin and sending one branch to inner margin beyond middle, the other to tornus, some white points beyond it on costa; an oblique white fascia from apex to the postmedial line; termen narrowly white, expanding into triangular marks in the interspaces below vein 4; cilia white. Hind wing fuscous black, whitish at base; a white striga on vein 2 towards termen; slight white marks on termen above and below vein 2; cilia black at apex, chequered white and black at middle, white towards tornus;

the underside white, the costal and terminal areas broadly suffused with black irrorated with white; a discoidal spot and curved postmedial line.

Hab. Sikhim (*Pilcher*), 1 ♀. *Exp.* 38 millim.

*2869. Trachea melanoleuca. (Plate CX. fig. 29.)

Euplexia melanoleuca, Hmpsn. Ann. S. Afr. Nat. Mus. ii. p. 284 (1902).

♀. Head and thorax white slightly tinged with brown; palpi black at sides, the extremities of 2nd and 3rd joints white; frons at sides, antennæ, tips of tegulæ, and two patches on each patagium black; tarsi ringed with black; abdomen white, the dorsal crests black, lateral patches and dorsal and ventral patches on anal segment black. Fore wing white, the basal, costal, and postmedial areas suffused with smoky brown; a short black streak below base of cell; subbasal line double at costa, then waved, ending at submedian fold; an antemedial waved black line incurved and obsolescent in cell, angled inwards on vein 1; orbicular pale brown, elliptical, erect; medial shade black, oblique from costa to median nervure, then incurved and ending in a spot above vein 1; reniform smoky brown defined by black, very large and rounded; postmedial line minutely waved, bent outwards below costa, excurved to vein 4, then incurved, with some white on its outer edge towards inner margin and two black lunules before it above veins 5 and 6; three white points on postmedial part of costa; an indistinct, curved, minutely dentate subterminal line; a subapical black patch with a white spot on its inner edge; a K-like terminal black mark on vein 5, a lunule and patch on cilia below vein 2, a wedge-shaped patch at tornus, and a series of small terminal lunules. Hind wing white suffused with fuscous especially towards termen; a dark postmedial line angled inwards at discal and submedian folds; the tornal area white with a black spot and patch on cilia below vein 2 and lunule at tornus; a terminal waved line defined by white on inner side; cilia white; the underside with black discoidal spot, curved postmedial line, and black patches on cilia at apex and below vein 2.

Hab. Natal, 1 ♀ type† in Coll. Druce. *Exp.* 50 millim.

2870. Trachea melanodonta, n. n. (Plate CX. fig. 30.)

Bryophila melanoleuca, Hmpsn. Ann. S. Afr. Mus. ii. p. 290 (1902), nec id. p. 284.

♀. Head and thorax white; palpi black, white at tips; frons with lateral black bars; antennæ black below; patagia and metathorax at extremities black; pectus and legs mixed with black, the fore and mid tibiæ and the tarsi banded black and white; abdomen white irrorated with black, the ventral surface with black patch before anal tuft. Fore wing white; the base of costa black with olive-fulvous patches below it and cell; a broad black antemedial band, its inner edge angled outwards in cell and its outer edge

strongly below cell; medial black streaks on costa and inner margin, with some olive-fulvous scales below the former and between cell and latter; a white spot in end of cell ringed with black and connected by a short streak with the black discoidal bar, a black patch above it on costa; a postmedial black point on costa; a broad oblique black subterminal band, with white point at costa, from costa to vein 6, and an oblique band from submedian fold to tornus with white streak on its upper edge and the area between it and the band from costa broadly suffused with fuscous edged with black and white scales; some diffused fuscous spots on termen towards apex and a streak in submedian fold; a terminal series of black striæ; cilia chequered black and white. Hind wing whitish suffused with black except at base; cilia white; the underside white irrorated with fuscous, a blackish spot on middle of costa, rather diffused sinuous postmedial line, and traces of subterminal band.

Hab. Natal, Durban (*Leigh*), 1 ♀ type. *Exp.* 26 millim.

2871. Trachea melanobasis. (Plate CX. fig. 31.)

Euplexia melanobasis, Hmpsn. Ann. S. Afr. Mus. ii. p. 285 (1902).

♀. Head and thorax white; palpi except at tips, antennæ, base and tips of patagia and sides of metathorax black; tegulæ rufous with some white in centres; legs black ringed with white; abdomen white irrorated with dark brown and dorsally banded with black. Fore wing with the basal area black, with white patch with waved outer edge on base of costal area and rufous spot on it at costa and streak below cell, the edge of the black area nearly straight from costa to vein 1 where it is retracted, then erect to inner margin, followed by a white band and irroration shading into the leaden grey terminal area; claviform and orbicular absent; reniform represented by a quadrate black patch with oblique white mark near its inner edge, and with a black bar from it to costa; postmedial line white, bent outwards below costa, obsolete between veins 7 and 2, then angled inwards in submedian fold and rather oblique to inner margin, where it is followed by a large rather triangular black patch extending to tornus; the costa spotted black and white towards apex, with a broad rather oblique black subterminal bar from costa to vein 7; a subterminal black spot with white point on its inner edge above vein 5; traces of the subterminal line between veins 5 and 2 with slight olive shading beyond it; some olive shading below vein 2 before and beyond the postmedial line; a slight terminal dark line; cilia chequered fuscous and white. Hind wing fuscous black, the cilia chequered with white at middle; the underside white irrrorated with black, the costal area suffused with black, a discoidal spot and diffused postmedial line incurved below vein 4.

Hab. Natal, Mooi R., 1 ♀ type. *Exp.* 34 millim.

2872. Trachea atritornea, n. sp. (Plate CX. fig. 32.)

♀. Head and thorax black mixed with white and some olive-yellow scales; antennæ ringed with white; palpi black irrorated with white; pectus with blackish hair tipped with white and some pale brownish at sides; tibiæ and tarsi ringed with white; abdomen black irrorated with white and some pale brownish at base; the crests with some green. Fore wing white, in parts suffused with olive-green, purplish fuscous, and black; antemedial line oblique, waved, with some white before and beyond it at inner margin; claviform slightly defined by black; orbicular represented by a small black spot on a green patch surrounded by a white patch connected by a bar with costa; reniform large, with green and black annulus on inner side and below, and large white lunule with some pale rufous scaling on outer side above; a wedge-shaped white mark below end of cell; postmedial line double filled in with white at costa, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, with small white spot at inner margin; postmedial area white, with black and white marks on costa with some green below them and some rufous between veins 3 and 1; subterminal line white, faintly defined on inner side by blackish, incurved below vein 3, with black patches beyond it at apex and below vein 6 and large patch at tornus; cilia chequered black and white. Hind wing fuscous black with some whitish in and below cell; an indistinct sinuous postmedial line; a small white spot near extremity of vein 2 with some white irroration above it; cilia white with a strong black line through them except towards tornus; the underside white irrorated with black, the costal and terminal areas broadly suffused with black, a small discoidal annulus and curved waved postmedial line.

Hab. Colombia, Bogotá, 1 ♀ type. *Exp.* 40 millim.

2873. Trachea toxaridia.

Hadena toxaridia, Druce, Biol. Centr.-Am., Het. i. p. 293, pl. 27. f. 25 (1889).

♂. Head and thorax grey-white mixed with fuscous and olive-yellow; palpi and frons blackish mixed with white; tibiæ and tarsi blackish banded with white; abdomen whitish thickly irrorated

Fig. 23.—*Trachea toxaridia*, ♂. ½.

with black, the dorsal crests black, the anal tuft ochreous. Fore wing white suffused in parts with olive-yellow, in others with

purplish fuscous; the veins irrorated with black scales, the costa black with series of white points; subbasal line black defined by white on inner side, waved, from costa to vein 1; antemedial line black defined by white on outer side, somewhat oblique, waved; claviform olive defined by black at extremity; orbicular oblique oblong, with olive-yellow and black in centre defined by white at sides only; reniform oblong, with olive-yellow and white centre with some black irroration above and below defined by white at sides only; a medial line oblique from costa to median nervure, then waved; postmedial line double at costa, bent outwards below costa, then minutely waved, incurved at discal fold and bent inwards to submedian fold, broadly defined by violaceous white beyond the cell and slightly towards inner margin; the postmedial area suffused with fuscous except at costa, on which there are some white points; subterminal line represented by a series of small white lunules with olive-yellow spots beyond them before the terminal series of black spots which have some white between them; cilia white and yellow with a series of black spots at tips. Hind wing white strongly suffused with fuscous except at base; a dark terminal line; cilia fuscous, whitish at base and tips; the underside white irrorated with fuscous, a diffused oblique antemedial line, black discoidal point, and irregularly crenulate postmedial line.

Hab. Mexico, Milpas (*Forrer*), 1 ♂ type. *Exp.* 38 millim.

Sect. V. Antennæ of male evenly ciliated.

A. Hind wing of male with the upper part of cell short, the discocellulars oblique; veins 6, 7 strongly stalked, their stalks curved upwards and thickened.

2874. Trachea stellifera.

Dianthœcia stellifera, Moore, Lep. Atk. p. 123 (1882); Hmpsn. Moths Ind. ii. p. 216.

♂. Head and thorax olive-green mixed with whitish; palpi dark brown at sides; tegulæ at base and tips and patagia at tips dark brown; legs irrorated with dark brown; abdomen brown with pale segmental bands, the anal tuft tinged with rufous. Fore wing

Fig. 24.—*Trachea stellifera*, ♂. ½.

olive-green slightly irrorated with black; a black point at base; subbasal line represented by white striæ from costa and cell with black spots before them at costa and above vein 1 and diffused black band beyond them; antemedial line whitish, waved, defined by

black spots on each side of it at costa, then by a few black scales; claviform defined by diffused black; orbicular with dark centre, else hardly traceable; reniform with incomplete whitish annulus forming a spot at lower extremity, some dark points in its upper part and patch in lower; the cell between the stigmata black with a black bar above it from costa; some black suffusion before the postmedial line, which is whitish defined by black on inner side, strongly bent outwards below costa, then minutely dentate, incurved below vein 4, the costa beyond it with black striæ and white points; subterminal line formed of interrupted white striæ defined by black patches on inner side at costa and on both sides at middle and above inner margin, angled outwards at vein 7 and inwards at discal and submedian folds, excurved at middle and bent outwards to tornus; a terminal series of small black lunules: cilia with some black at tips. Hind wing fuscous brown; cilia whitish at tips; the underside paler, with oblique discoidal bar and diffused curved postmedial line.

Hab. Sikhim, 1 ♂ type. *Exp.* 44 millim.

B. Hind wing of male with the neuration normal.

a. Fore wing of male with the disk clothed with silky downturned scales on underside.

2875. Trachea distans.

Hadena distans, Moore, Lep. Atk. p. 130 (1882); Hmpsn. Moths Ind. ii. p. 208.

Head and thorax rufous mixed with some black; palpi black above; tegulæ with slight dark medial line; tarsi blackish ringed with rufous; abdomen pale rufous irrorated with fuscous. Fore wing bright rufous irrorated with black, the basal half slightly suffused with fuscous except inner area; subbasal line double, black, waved, from costa to vein 1; antemedial line indistinct, double, waved, bent inwards as a black streak above inner margin; claviform quadrate, defined by black and extending to median

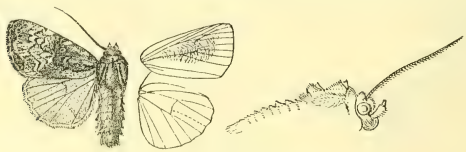


Fig. 25.—*Trachea distans*, ♂. ½.

nervure; orbicular round, defined by black and with slight whitish annulus; reniform more or less completely filled in with white, with strong black bar on inner side, otherwise slightly defined and with irregular outer edge; a medial black striga from costa; postmedial line double, bent outwards below costa, then waved, oblique to vein 3 near subterminal line, then incurved, some pale points

beyond it on costa; subterminal line represented by a series of small dentate whitish marks, defined on inner side at middle by slight dentate black marks, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules. Hind wing pale rufous tinged with fuscous brown, a terminal series of black lunules; the underside pale rufous slightly irrorated with fuscous, a small discoidal spot, slight waved postmedial line, and diffused subterminal band.

Hab. Assam, Khásis, 1 ♂ type; Singapore (*Ridley*), 2 ♂; Borneo, Trusau (*Shelford*), 1 ♂. *Exp.* ♂ 34, ♀ 40 millim.

b. Abdomen of male clothed with ferruginous scales except at extremity above; underside of both wings clothed with ferruginous scales to submedian fold and postmedial line.

2876. Trachea indistans.

Hadena indistans, Guen. Noct. ii. p. 87 (1852); Hmpsn. Moths Ind. ii. p. 208.

♂. Head and thorax red-brown tinged with grey and irrorated with fuscous; palpi blackish at sides; frons with lateral black bars; tarsi black ringed with rufous; abdomen ferruginous, the extremity dorsally grey-brown. Fore wing red-brown tinged with grey and irrorated with dark brown; subbasal line double, waved, from costa to submedian fold; antemedial line double, waved, curved; claviform short, defined by black, extending to median nervure; orbicular defined by black at sides only, oblique oblong; reniform defined by black on inner side and below; a medial blackish shade from costa to median nervure; postmedial line indistinct, double, slightly bent outwards below costa, then waved, oblique to vein 3 near subterminal line, then incurved, some pale points with black striæ

Fig. 26.—*Trachea indistans*, ♂. ½.

between them beyond it on costa; subterminal line represented by a series of slight ochreous dentate marks, defined at middle on inner side by small dentate blackish marks and on outer by small spots, somewhat angled outwards at vein 7; a terminal series of minute black points; cilia fuscous and greyish. Hind wing greyish suffused with rufous and fuscous; a fine waved dark terminal line; cilia whitish tinged with rufous. Underside of both wings clothed with ferruginous scales to postmedial line except on inner area; fore wing with dark postmedial line angled outwards below costa and at vein 4

and diffused subterminal band; hind wing with curved postmedial line from costa to vein 4, diffused subterminal band obsolescent towards tornus and terminal series of black lunules.

♀. Abdomen and underside without the ferruginous scales.

Ab. 1. Fore wing with white annulus to orbicular, the reniform filled in with white.

Hab. Punjab, Kulu, Sultanpur (*G. Young*), 1 ♂, Simla (*Harford*), 1 ♂, 2 ♀, Dharmsála (*Hocking*), 2 ♂, 3 ♀, Manpuri, 1 ♀; Madras, Nilgiris (*Hampson*), 4 ♂. *Exp.* 32–36 millim.

c. Wings of male normal.

*a*¹. Abdomen of male with thick lateral fringes of long hairs.

*2877. Trachea iorrhoa.

Hadena iorrhoa, Meyr. Trans. Ent. Soc. 1902, p. 27.

♂. Head and thorax bright rufous slightly mixed with ochreous; tarsi with ochreous rings; abdomen paler rufous. Fore wing bright rufous; the subbasal line dark, waved, from costa to submedian fold where there is a dark streak from its extremity, defined on outer side by ochreous; antemedial line defined on inner side by ochreous, oblique, angled outwards below costa and inwards on vein 1; claviform short, broad, defined by blackish; orbicular and reniform with ochreous annuli, the former quadrate, defined on each side by blackish, open above and below, the latter quadrate, defined on inner side by blackish almost forming a **V** with orbicular;

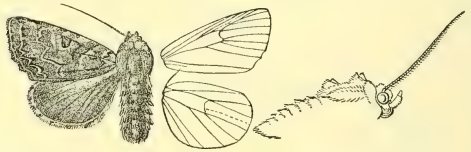


Fig. 27.—*Trachea iorrhoa*, ♂. ½.

postmedial line defined on outer side by ochreous, bent outwards below costa, dentate beyond cell, then more distinct, oblique, angled outwards on vein 2 and inwards in submedian fold, some ochreous points beyond it on costa; subterminal line ochreous, defined on inner side by rather dentate brown marks, slightly angled outwards on vein 7 and dentate to termen on veins 4 and 3; a terminal series of small dark lunules. Hind wing fuscous brown, the cilia reddish ochreous; the underside whitish, the costal and terminal areas tinged with rufous, a large blackish discoidal lunule and indistinct dentate postmedial line.

Hab. Tasmania, type † ♂ in Coll. Meyrick. *Exp.* 44 millim.

b^1. Abdomen of male with lateral tufts of long black hair on underside from base.
a^2. Thorax with dark brown band behind tegulæ. *nigribarbata.*
b^2. Thorax without dark band behind tegulæ..... *breviuscula.*

2878. Trachea nigribarbata, n. sp.

♂. Head and thorax reddish brown mixed with black; palpi with black lateral spots on 1st and 2nd joints; prothorax with dark brown band behind tegulæ; abdomen brown suffused with fuscous, the lateral tufts and ventral surface black, the anal tuft rufous and whitish below. Fore wing reddish brown slightly suffused with fuscous and irrorated with black; subbasal line double, waved, from costa to vein 1; antemedial line double, waved, curved; claviform a blackish mark; orbicular and reniform pale tinged with brown and defined by black, the former oblique elliptical, the latter incompletely defined; an indistinct waved medial line; postmedial line double, slightly bent outwards below costa, then minutely waved, somewhat incurved at discal fold,

Fig. 28.—*Trachea nigribarbata*, ♂. ½.

incurved below vein 4, a black patch beyond it on costal area with pale points on costa; subterminal line represented by a series of slight ochreous marks defined on both sides at middle by small black marks, somewhat angled outwards at vein 7 and excurved at middle: a terminal series of black points; cilia ochreous and blackish with a series of black points. Hind wing fuscous brown, the cilia ochreous with a fuscous line through them; the underside ochreous tinged with rufous and thickly irrorated with black, a black discoidal spot, minutely waved postmedial line, and diffused subterminal line.

♀. Fore wing with the inner, postmedial, and apical areas pale.

Hab. Br. E. Africa, Masailand, E. Quasso (*Betton*), 1 ♂ type; Natal, Durban (*Gooch*), 1 ♀. *Exp.* 32 millim.

2879. Trachea breviuscula. (Plate CXI. fig. 1.)

Xylina breviuscula, Wlk. xv. 1735 (1858).

♀. Head and thorax pale greyish rufous slightly irrorated with fuscous; palpi black above; tarsi blackish with pale rings; abdomen greyish suffused with brown. Fore wing pale greyish rufous

slightly irrorated with fuscous, the inner half of medial area suffused with black-brown except towards inner margin; subbasal line double, waved, from costa to submedian fold; antemedial line double, waved, oblique; claviform short and broad, defined by black and filled in with black-brown; orbicular rufous defined by black, oblique elleptical; reniform with strong black bar on inner side, otherwise undefined; a medial blackish striga from costa; postmedial line double, bent outwards below costa, then waved, oblique to vein 3 near subterminal line, then incurved, a blackish patch beyond it on costa with pale points on it before the subterminal line, which is very indistinct, pale, angled outwards at vein 7, then somewhat waved and excurved at middle; a terminal series of small black lunules; cilia with pale line at base. Hind wing fuscous brown, the cilia pale rufous with a slight dark line through them; the underside whitish, the costal area tinged with rufous and irrorated with brown, a black discoidal spot, minutely waved postmedial line, and diffused subterminal line.

Hab. NATAL, Durban (*Gueinzius, Gooch*), 2 ♀ type. *Exp.* 34 millim.

c[1]. Abdomen of male normal.
  a[2]. Fore wing with more or less olive or bright green mixed.
    a[3]. Fore wing with the subterminal line dentate to termen throughout.
      a[4]. Head and thorax emerald-green ..... *smaragdistis.*
      b[4]. Head and thorax rufous.
        a[5]. Fore wing without white apical patch ..... *mniochlora.*
        b[5]. Fore wing with white apical patch ..... *leucopera.*
    b[3]. Fore wing with the subterminal line dentate at veins 4, 3, 2.
      a[4]. Fore wing with white striga or small spot beyond the extremity of claviform.
        a[5]. Fore wing with white apical patch.
          a[6]. Fore wing with the orbicular an elliptical black spot..... *trichroma.*
          b[6]. Fore wing with the orbicular a white point.
            a[7]. Fore wing with blackish patch with white streak about it beyond the white striga at extremity of claviform ..... *bryochlora.*
            b[7]. Fore wing with diffused white beyond the white striga at extremity of claviform... *albifusa.*
          c[6]. Fore wing with the orbicular defined at sides by white.
            a[7]. Fore wing olive-green mixed with some yellow ..... *albidisca.*
            b[7]. Fore wing rufous slightly tinged with olive and mixed with yellow..... *aurantiaca.*
        b[5]. Fore wing without apical white patch.
          a[6]. Fore wing with the orbicular defined at sides by white.
            a[7]. Fore wing with the postmedial line strongly incurved and dentate below vein 4 ..... *auroviridis.*
            b[7]. Fore wing with the postmedial line much less incurved and dentate below vein 4 ..... *chrysochlora.*

b^6. Fore wing with the orbicular large, olive-green, conjoined to the reniform.
a^7. Fore wing without terminal series of black lunules ..... *albinota.*
b^7. Fore wing with terminal series of black lunules ..... *olivacea.*
b^4. Fore wing with triangular olive-green patch beyond the claviform.
a^5. Fore wing without terminal series of black points ..... *venosa.*
b^5. Fore wing with terminal series of black points ..... *literata.*
c^4. Fore wing without white or pale patch beyond the claviform.
a^5. Fore wing with the reniform white ..... *chalcochlora.*
b^5. Fore wing with the reniform green.
a^6. Fore wing with dark suffusion beyond the subterminal line at discal and submedian folds ..... *atrovirens.*
b^6. Fore wing without dark suffusion beyond the subterminal line at discal and submedian folds ..... *dinava.*
c^3. Fore wing with the subterminal line dentate at veins 4, 3 ..... *aurigera.*
d^3. Fore wing with the subterminal line excurved at middle but not dentate.
a^4. Fore wing with white or pale mark beyond the claviform.
a^5. Fore wing with oblique white striga beyond the claviform .... *microspila.*
b^5. Fore wing with wedge-shaped white spot beyond the claviform ..... *melanospila.*
c^5. Fore wing with oblique bidentate whitish patch beyond the claviform ..... *atriplicis.*
d^5. Fore wing with oblique pale bidentate patch beyond orbicular and claviform.
a^6. Fore wing with the ground-colour purplish fuscous.
a^7. Fore wing with green largely mixed ..... *auriplena.*
b^7. Fore wing with slight green markings.
a^8. Hind wing with the basal half white ... *leucodonta.*
b^8. Hind wing wholly tinged with brown ... *delicata.*
b^6. Fore wing with the ground-colour much paler violaceous grey.
a^7. Hind wing white, the terminal area brown.
a^8. Fore wing with the subterminal line green ..... *anguliplaga.*
b^8. Fore wing with the subterminal line whitish ..... *malezieuxi.*
b^7. Hind wing almost entirely suffused with brown ..... *uscana.*
b^4. Fore wing without pale mark beyond the claviform.
a^5. Fore wing with the subterminal line green.
a^6. Fore wing with dark centres to the orbicular and reniform.
a^7. Fore wing with the orbicular not confluent with a spot below the cell.
a^8. Fore wing with the subterminal line excurved and waved at middle ..... *tociensis.*

b^8. Fore wing with the subterminal line excurved but not waved at middle ..... *chlorogrammata.*
b^7. Fore wing with the orbicular confluent with a spot below the cell ..... *lucia.*
b^6. Fore wing with the orbicular and reniform filled in with pale grey..... *pratti.*
b^5. Fore wing with the subterminal line whitish.
a^6. Fore wing with some pink suffusion in submedian interspace beyond postmedial line ..... *viridis.*
b^6. Fore wing without pink suffusion in submedian interspace beyond postmedial line.
a^7. Fore wing with emerald-green centres to orbicular and reniform ..... *smaragdina.*
b^7. Fore wing with olive-green centres to orbicular and reniform ..... *viridimusca.*
c^7. Fore wing without green centres to orbicular and reniform.
a^8. Fore wing without blackish streak in submedian interspace on medial area.
a^9. Fore wing with the inner margin green beyond antemedial line ..... *eugrapha.*
b^9. Fore wing with the inner margin not green beyond antemedial line.
a^{10}. Fore wing without white annuli to orbicular and reniform ..... *nitens.*
b^{10}. Fore wing with white annuli to orbicular and reniform ..... *jancousci.*
b^8. Fore wing with blackish streak in submedian interspace on medial area.
a^9. Fore wing with the reniform narrow and constricted at middle ..... *marina.*
b^9. Fore wing with the reniform broad with whitish or pale patch on outer edge.
a^{10}. Fore wing with the subterminal line distinct ..... *miselioides.*
b^{10}. Fore wing with the subterminal line almost obsolete ..... *macerata.*

b^2. Fore wing without olive or bright green mixed.
a^3. Fore wing with the reniform not wholly filled in with white.
a^4. Fore wing without white or pale points on outer edge of reniform.
a^5. Fore wing with the subterminal line dentate to termen at veins 4, 3.
a^6. Hind wing with distinct blackish discoidal lunule.
a^7. Fore wing with veins 4, 3 not defined by white streaks beyond postmedial line ..... *semilunata.*
b^7. Fore wing with veins 4, 3 defined by white streaks beyond postmedial line ... *inordinata.*
b^6. Hind wing without blackish discoidal lunule.
a^7. Fore wing without black streak in submedian fold on medial area ..... *leucodon.*
b^7. Fore wing with black streak in submedian fold on medial area.
a^8. Fore wing with the medial area not darker than the ground-colour ..... *cinefacta.*

b^8. Fore wing with the medial area darker than the ground-colour.
a^9. Fore wing with the antemedial line produced to a long tooth above vein 1 ... *centralis*.
b^9. Fore wing with the antemedial line produced to a shorter tooth above vein 1. *unita*.
b^5. Fore wing with the subterminal line more or less dentate at veins 4, 3 but not to termen.
a^6. Fore wing with black streak below base of cell.
a^7. Fore wing with black streak in submedian fold on medial area.
a^8. Fore wing with the medial area suffused with rufous and darker than the ante- and postmedial areas.
a^9. Fore wing with the claviform defined by black ..... *sora*.
b^9. Fore wing with the claviform absent ... *barnesi*.
b^8. Fore wing with the medial area suffused with black and darker than the ante- and postmedial areas.
a^9. Fore wing with the terminal area dark ..... *lona*.
b^9. Fore wing with the terminal area concolorous.
a^{10}. Fore wing with black fascia in submedian interspace above tornus ... *turbulenta*.
b^{10}. Fore wing without black fascia in submedian interspace above tornus.
a^{11}. Fore wing with the medial area wholly suffused with black ..... *illyrica*.
b^{11}. Fore wing with the medial area suffused with black towards costa and inner margin ..... *pabulatricula*.
c^8. Fore wing with the medial area concolorous.
a^9. Fore wing with the postmedial line incurved below vein 4 and approximated to the reniform.
a^{10}. Fore wing with the ground-colour grey.
a^{11}. Fore wing with the terminal area concolorous.
a^{12}. Fore wing grey mixed with black and without brown tinge ..... *allecto*.
b^{12}. Fore wing grey mixed with black and tinged with brown ..... *mactata*.
b^{11}. Fore wing with the terminal area darker than the ground-colour.
a^{12}. Fore wing grey mixed with black and without brown tinge ..... *ferens*.
b^{12}. Fore wing grey mixed with black and tinged with brown ..... *separans*.
b^{10}. Fore wing with the ground-colour brown.
a^{11}. Fore wing with the terminal area concolorous.
a^{12}. Fore wing with the orbicular very elongate and connected with the reniform ..... *perpenoa*.

b^{12}. Fore wing with the orbicular short, oblique elliptical.
a^{13}. Fore wing with the black streaks below base of cell and on medial area strong ..... *fraudulenta.*
b^{13}. Fore wing with the black streaks below base of cell and on medial area slight.
a^{14}. Fore wing with the inner and postmedial areas not suffused with fuscous ..... *conciliata.*
b^{14}. Fore wing with the inner and postmedial areas suffused with fuscous ..... *commixta.*
b^{11}. Fore wing with the terminal area darker than the ground-colour.
a^{12}. Fore wing without oblique pale patch beyond the claviform.
a^{13}. Fore wing with prominent black patches beyond subterminal line at discal and submedian folds ... *indocilis.*
b^{13}. Fore wing without prominent black patches beyond subterminal line at discal and submedian folds ..... *obscura.*
b^{12}. Fore wing with slight oblique pale patch beyond the claviform ..... *tusa.*
b^{9}. Fore wing with the postmedial line oblique below vein 5 and widely separated from the reniform, a white mark beyond it in submedian fold ..... *divesta.*
b^{7}. Fore wing without black streak in submedian fold on medial area.
a^{8}. Fore wing without pale patch beyond the reniform.
a^{9}. Fore wing grey with hardly any tinge of rufous ..... *cervana.*
b^{9}. Fore wing grey, the medial area tinged with rufous ..... *finitima.*
c^{9}. Fore wing wholly tinged with rufous or red-brown.
a^{10}. Fore wing with the terminal area concolorous ..... *basilinea.*
b^{10}. Fore wing with the terminal area darker ..... *unanimis.*
d^{9}. Fore wing nearly uniform fuscous.
a^{10}. Fore wing with the postmedial line not incurved at discal fold ..... *fumosa.*
b^{10}. Fore wing with the postmedial line slightly incurved at discal fold ..... *fumeola.*
b^{8}. Fore wing with pale patch beyond the reniform.
a^{9}. Fore wing with the antemedial line slightly angled inwards on vein 1.
a^{10}. Fore wing nearly uniform fuscous ... *binotata.*
b^{10}. Fore wing suffused with red-brown and purplish ..... *adnixa.*
b^{9}. Fore wing with the antemedial line evenly curved from submedian fold to inner margin ..... *paviæ.*

b^6. Fore wing without black streak below base of cell.
a^7. Fore wing with black streak in submedian fold on medial area ..... *indirecta.*
b^7. Fore wing without black streak in submedian fold on medial area ..... *catalina.*
c^5. Fore wing with the subterminal line excurved at middle but not dentate.
a^6. Fore wing with black streak below base of cell.
a^7. Fore wing with black streak in submedian fold on medial area.
a^8. Fore wing with the reniform wholly defined by black and constricted at middle ..... *characta.*
b^8. Fore wing with the reniform defined by black on inner side only and not constricted at middle ..... *jocasta.*
b^7. Fore wing without black streak in submedian fold on medial area.
a^8. Fore wing with pale oblique fascia from apex, the postmedial area below it pale ..... *erica.*
b^8. Fore wing with the apical and postmedial areas concolorous ..... *pausis.*
b^6. Fore wing without black streak below base of cell.
a^7. Fore wing with the claviform extending to postmedial line ..... *luteocinerea.*
b^7. Fore wing with the claviform not extending to postmedial line.
a^8. Fore wing flesh-colour slightly irrorated with brown ..... *dilara.*
b^8. Fore wing largely suffused with brown.
a^9. Fore wing with pale patch beyond the reniform ..... *genetrix.*
b^9. Fore wing without pale patch beyond the reniform.
a^{10}. Fore wing with the ground-colour pale grey.
a^{11}. Fore wing tinged in parts with pinkish ..... *modica.*
b^{11}. Fore wing not tinged with pinkish.
a^{12}. Head and tegulæ concolorous ..... *modiola.*
b^{12}. Head and tegulæ chocolate-brown . *mustelina.*
b^{10}. Fore wing with the ground-colour rufous.
a^{11}. Fore wing with the subterminal line slightly incurved at discal fold ... *intermedia.*
b^{11}. Fore wing with the subterminal line angled inwards at discal fold with a small black spot below the angle. *cuneata.*
c^{10}. Fore wing reddish brown largely suffused with black, especially on inner area ..... *intermixta.*
d^{10}. Fore wing nearly uniform fuscous brown.
a^{11}. Fore wing with the postmedial line reduced to points, the orbicular and reniform almost obsolete ..... *ethnica.*

b^{11}. Fore wing with the postmedial line entire and slightly defined by whitish.
a^{12}. Fore wing with the orbicular and reniform faintly defined ..... *parcata.*
b^{12}. Fore wing with the orbicular and reniform with slight pale annuli defined by blackish.
a^{13}. Fore wing with the claviform absent ..... *commoda.*
b^{13}. Fore wing with the claviform present ..... *enigra.*
b^4. Fore wing with white or pale points on outer edge of reniform.
a^5. Fore wing with yellow spots on orbicular and reniform ..... *espumosa.*
b^5. Fore wing without yellow spots on orbicular and reniform.
a^6. Fore wing with the postmedial line oblique from below costa to vein 3 near subterminal line.
a^7. Fore wing without black streak below vein 3 from postmedial line to termen.
a^8. Fore wing almost entirely suffused with black ..... *opposita.*
b^8. Fore wing red-brown with slight fuscous suffusion ..... *consummata.*
c^8. Fore wing red-brown suffused with purplish grey ..... *siderifera.*
d^8. Fore wing grey-brown without rufous tinge ..... *connivens.*
b^7. Fore wing with black streak below vein 3 from postmedial line to termen ..... *dinavana.*
b^6. Fore wing with the postmedial line excurved or straight from below costa to vein 4, and not approximated to the subterminal line.
a^7. Fore wing with the postmedial line minutely dentate below vein 4.
a^8. Hind wing wholly suffused with brown.
a^9. Fore wing with the ante- and postmedial areas concolorous ..... *niveiplaga.*
b^9. Fore wing with the ante- and postmedial areas grey-white except towards costa ..... *fasciata.*
b^8. Hind wing whitish, the terminal area suffused with brown.
a^9. Fore wing with the subterminal line dentate at veins 4, 3.
a^{10}. Head, thorax, and fore wing largely mixed with blackish.
a^{11}. Fore wing with the reniform very large, with some pale rufous suffusion beyond it ..... *rubrivena.*
b^{11}. Fore wing with the reniform smaller, without rufous suffusion beyond it. *furva.*
b^{10}. Head, thorax and fore wing without black mixed.
a^{11}. Fore wing reddish brown mixed with whitish, the terminal area somewhat darker .. .. *anceps.*

b^{11}. Fore wing nearly even fuscous brown tinged with grey	*oblonga.*
b^{9}. Fore wing with the subterminal line excurved at middle but not dentate.	
a^{10}. Fore wing with the medial and terminal areas concolorous.	
a^{11}. Fore wing fuscous brown, the reniform with two white points at lower extremity	*geminimacula.*
b^{11}. Fore wing purplish black, the reniform with minute white lunule on its outer edge with one or two points above and below it	*impulsa.*
b^{10}. Fore wing bright rufous, the medial and terminal areas suffused with black	*brunnea.*
b^{7}. Fore wing with the postmedial line evenly curved below vein 4	*secalis.*
b^{3}. Fore wing with the reniform wholly filled in with white.	
a^{4}. Fore wing with the ante- and postmedial areas pale rufous	*chalcirena.*
b^{4}. Fore wing with the ante- and postmedial areas white except towards costa	*ascoldis.*

*2880. Trachea smaragdistis, n. n. (Plate CXI. fig. 2.)

Euplexia smaragdina, Beth.-Baker, Nov. Zool. xiii. p. 195 (1906), nec Neum. 1883.

♂. Head and thorax emerald-green; palpi blackish at sides; base, middle, and extremity of patagia, and metathorax with some black scales; legs brownish; pectus and abdomen ochreous. Fore wing emerald-green; small black spots below base of costa and cell with white points on their outer edges and followed by a diffused irregular black band; the antemedial line white, incurved from costa to median nervure, angled outwards below cell and above inner margin and inwards on vein 1, and with black points on its outer edge at costa, in submedian fold, and above inner margin; a black spot with white bar on its outer edge below base of vein 2; orbicular black with white annulus, small, oblique elliptical; reniform green with white annulus; the end of cell and area above it suffused with black, with white bar across end of cell; some black suffusion beyond the reniform; the postmedial line white, arising as an oblique striga above the reniform with some black suffusion above it, bent strongly outwards below costa, excurved to vein 3, angled inwards in submedian fold, and with black spots and bars on its inner edge, and a series of points beyond it becoming small dentate marks towards inner margin; a black patch on costa before apex and a series of dentate spots on termen varying in size. Hind wing pale suffused with fuscous and with pale curved postmedial line; the underside whitish with blackish discoidal point and curved postmedial line.

Hab. Br. N. Guinea, Mt. Kebea (*Pratt*), type in Coll. Bethune-Baker; Queensland, Geraldton, in Coll. Turner. *Exp.* 32 millim.

*2881. Trachea mniochlora. (Plate CXI. fig. 3.)

Hadena mniochlora, Meyr. Trans. Ent. Soc. 1889, p. 469.
Euplexia viridacea, Beth.-Baker, Nov. Zool. xiii. p. 195 (1906).

♂. Head, thorax, and abdomen bright rufous; palpi dark brown at sides; tibiæ and tarsi slightly banded with dark brown. Fore wing golden green, the antemedial area except towards costa and the medial area, except just beyond antemedial line, suffused with red-brown; subbasal line silvery white, oblique from costa, bent outwards in cell, then oblique to vein 1 and strongly angled outwards above inner margin, defined on each side by black marks below costa and cell; antemedial line indistinctly double filled in with silvery white, the outer line stronger and black in submedian interspace and above inner margin, oblique from below costa to submedian fold, angled inwards on vein 1 and outwards above inner margin; claviform represented by a slight white bar defined on each side by black at its extremity; orbicular and reniform with slight white annuli defined by black, open below, the former conical, the latter triangular, some black suffusion between and beyond them; a blackish spot on middle of costa; postmedial line double, filled in with white, the inner line black, the outer brown, strong bent outwards below costa, then very slightly waved, slightly incurved at discal fold, below vein 4 curved inwards to vein 2 where it is angled inwards, then angled outwards on vein 1, some whitish points beyond it on costa; subterminal line white defined on inner side by pale olive-brown with short black streaks on the veins, angled acutely to termen on the veins, the wedge-shaped marks beyond it filled in with dark brown except at apex and tornus; a terminal series of slight black lunules defined on inner side by white; cilia yellow tinged with rufous. Hind wing pale yellowish rufous with some darker suffusion on disk before the very indistinct sinuous post-medial line; the underside paler, with brown discoidal spot and curved postmedial line.

Hab. Br. N. Guinea (*Sayer*), type † ♂ in Coll. Meyrick, Dinawa (*Pratt*), type † *viridacea* in Coll. Bethune-Baker, Ekeikei, Mt. Kebea.
Exp. 32 millim.

*2882. Trachea leucopera, n. sp. (Plate CXI. fig. 4.)

♂. Head, thorax, and abdomen yellowish rufous. Fore wing golden green suffused with rufous; subbasal line whitish, oblique, dentate, from costa to vein 1, defined by black on inner side at costa on both sides below the cell, and with some black below it on inner margin; antemedial line whitish, oblique, slightly sinuous, defined by black on outer side at costa and in cell and submedian interspace; claviform represented by a curved black and white bar at its extremity with some black irroration beyond it; orbicular and reniform with white annuli defined by black, the former conical, open below, the latter formed by two oblique bars, the inner touching

lower extremity of orbicular, the cell between them black; post-medial line black defined by white on outer side, bent outwards and almost obsolete below costa, incurved below vein 4, angled outwards in submedian fold and on vein 1 and inwards above vein 1, some white points beyond it on costa with blackish streaks between them; subterminal line white, acutely angled inwards in the interspaces and outwards to termen on the veins, with small dentate black marks before it below costa, an apical white patch beyond it and black marks above and below vein 5; a terminal series of small black lunules defined by white on inner side; cilia with series of slight black points at tips. Hind wing yellowish white, the costal area suffused with brown, the inner area tinged with rufous; a dark discoidal lunule and waved terminal line; cilia reddish yellow; the underside reddish yellow, a black discoidal lunule and rather diffused curved postmedial line from costa to vein 5.

Hab. Borneo, Sarawak (*Wallace*), 1 ♂ type. *Exp.* 32 millim.

*2883. Trachea trichroma. (Plate CXI. fig. 5.)

Hadena trichroma, Meyr. Trans. Ent. Soc. 1902, p. 26.

♀. Head and thorax pale greenish; palpi, patagia, and metathorax with blackish-brown spots (abdomen wanting). Fore wing pale greenish; subbasal line represented by a black-brown striga from costa; a patch below base of cell; a streak above inner margin before the antemedial line, which is oblique, waved, silvery white, with an oblique blackish striga beyond it from costa, and another below the cell with an irregular patch beyond it partly confluent with another before the postmedial line; orbicular an elliptical ill-defined spot; an oblique band from middle of costa to above median nervure; reniform silvery white with a blackish lunule on its inner edge; postmedial line blackish, slightly waved, bent outwards below costa, incurved in discal fold where it expands into a spot, oblique below vein 4, angled outwards in submedian fold and on vein 1 and inwards above inner margin; subterminal line indistinct, whitish, irregular, slightly defined by blackish on inner side below costa, with a triangular black patch beyond it in discal fold and a patch from vein 4 to tornus dentate inwards below veins 3 and 2; a terminal series of small black lunules. Hind wing fuscous, whitish at base; the underside whitish, the terminal area suffused with fuscous, a blackish discoidal lunule and curved postmedial line.

Hab. N. S. Wales, Sydney, type † ♀ in Coll. Meyrick. *Exp.* 34 millim.

2884. Trachea bryochlora. (Plate CXI. fig. 6.)

Hadena bryochlora, Meyr. Trans. Ent. Soc. 1897, p. 371.
Euplexia orophora, Swinh. A. M. N. H. (7) viii. p. 128 (1901).

♂. Head and thorax olive-green mixed with white and some black scales; palpi blackish at sides; abdomen ochreous suffused

with brown, the ventral surface whitish. Fore wing olive-green; blackish points in and below base of cell; subbasal line white with black spots on its inner edge below costa and cell and one beyond it below the cell; a diffused blackish streak above inner margin before the antemedial line, which is black defined on each side by white, oblique, interrupted, angled inwards on vein 1 and bent inwards to inner margin; claviform absent; orbicular represented by a small white spot, the reniform by a white bar defined by black on its inner side and a white lunule on its outer; medial line oblique, rather diffused, interrupted at median nervure, a small dentate white mark beyond it below vein 2, defined below by brown suffusion and connected by a streak with the postmedial line, which is black defined by white on outer side, strongly bent outwards below costa, then dentate, incurved at discal fold and oblique below vein 4, some white points with black streaks between them beyond it on costa; subterminal line white, towards apex diffused to termen as a white patch, defined on inner side by two small dentate black marks below costa and on outer by black spots from vein 5 to inner margin, angled inwards in submedian fold; a terminal series of small black spots defined by white on inner side. Hind wing deep fuscous brown with slight blackish spots on middle of termen defined by whitish on inner side; cilia olive-green; the underside white, the costal area slightly irrorated with brown, a large black discoidal spot, the terminal area suffused with black-brown.

Hab. N. S. Wales, Sydney, type † in Coll. Meyrick; Tasmania, 1 ♂ type *orophora*. *Exp.* 36 millim.

2885. **Trachea albifusa**, n. sp. (Plate CXI. fig. 7.)

♀. Head and thorax olive-green mixed with whitish and brown; palpi blackish at sides; pectus and legs brown mixed with whitish, the tarsi ringed black and white; abdomen brown. Fore wing olive-green suffused in parts with dark brown and white; some slight black marks at base; subbasal line black, oblique, diffused, interrupted, from costa to inner margin, emitting a short streak in submedian fold, the area beyond it suffused with white except towards costa and inner margin; antemedial line black, angled outwards below costa, then interrupted, oblique, sinuous, obsolescent towards inner margin, some brown suffusion beyond it in and below cell, below submedian fold extending to postmedial line; a small black spot in cell with white point on its outer edge representing the orbicular; reniform represented by a small white spot with white suffusion beyond and below it; postmedial line black, defined by white on outer side, bent outwards below costa, then dentate, oblique below vein 4, the costa beyond it black with white points: subterminal line formed of small irregular rather diffused white spots, interrupted at middle; the terminal area dark brown; a terminal series of small black lunules defined by white on outer side and forming a white patch at apex; cilia green at base,

chequered white and black at tips. Hind wing dark reddish brown; cilia pale rufous at base, white and fuscous at tips; the underside whitish tinged and irrorated with brown, the terminal area suffused with brown, a discoidal lunule and curved slightly waved postmedial line.

Hab. Java, Arjuno, 3000′ (*Doherty*), 1 ♀ type. *Exp.* 32 millim.

2886. Trachea albidisca.

Hadena albidisca, Moore, P. Z. S. 1867, p. 59, pl. 6. f. 17; Hmpsn. Moths Ind. ii. p. 215.
Dianthœcia nivescens, Butl. Ill. Het. B. M. vii. p. 58, pl. 128. f. 2 (1889).

Head and thorax olive-green with a few white scales; palpi whitish, black at sides; sides of frons black; pectus and legs ochreous and whitish, the tarsi banded with black; abdomen brownish, the dorsal crests and anal tuft rufous. Fore wing golden olive-green, with a bluish tinge before the antemedial line and on veins of medial area; subbasal line white defined on each side by black, angled inwards in cell and ending at vein 1; a black mark above inner margin before the antemedial line, which is black defined by white on inner side, oblique, angled inwards in cell, on vein 1, and to inner margin, the area beyond it suffused with dark brown in and beyond cell and below cell and vein 2 to postmedial line; a small triangular white mark from vein 2 marking extremity of claviform; orbicular blackish defined by some black scales and with slight white spot or bar on its outer edge, open below; a small elliptical white spot in cell before the reniform, which is represented by a diffused white patch extending to vein 2; postmedial line black defined by white on outer side, strongly bent outwards below costa, then dentate and produced to black and white points on the veins, oblique below vein 4 and incurved at vein 2, the costa beyond it black with white points on it; subterminal line white defined by black marks on inner side below costa, then on outer side, dentate and diffused at veins 7, 6, dentate at veins 4, 3, 2, and bent outwards to tornus; a terminal series of small black lunules slightly defined by white on inner side; cilia with a series of black points at tips. Hind wing pale uniformly suffused with fuscous brown, the cilia green mixed with brown towards apex; the underside white irrorated with brown, a black discoidal lunule, curved maculate postmedial line, and diffused subterminal band.

Hab. W. China, Omei-shan, 1 ♂, 2 ♀, Ni-tou, 3 ♀, Pu-tsu-fang, 1 ♀, Chia-kou-Ho (*Pratt*), 1 ♂, Wa-ssu-kou, 3 ♀, Ta-chien-lu (*Pratt*), 1 ♀; Punjab, Simla (*Harford*), 2 ♂, Dharmsála (*Hocking*), 3 ♂ type *nivescens*; Sikhim (*Russell*), 1 ♂ type; Assam, Khásis, 1 ♀, Chittagong, 1 ♀; Madras, Nilgiris (*Hampson*), 1 ♂, 2 ♀; Travancore, Pirmád (*Imray*), 1 ♂. *Exp.* 32–36 millim.

2887. Trachea aurantiaca. (Plate CXI. fig. 8.)

Euplexia aurantiaca, Hmpsn. Moths Ind. ii. p. 216 (1894).

♂. Head and thorax fulvous yellow mixed with a few white scales; sides of palpi and frons blackish; antennæ ringed with white; tarsi banded with black and white; abdomen fulvous yellow. Fore wing golden yellow suffused with red-brown, especially on medial area; the veins streaked with white and irrorated with brown; subbasal line white, waved, from costa to vein 1; antemedial line white, waved, incurved in cell and bent inwards to inner margin; a small dentate white spot from vein 2 marking extremity of claviform; orbicular brownish, defined on inner side by a few white scales, on outer by a slight oblique black and white bar; a small white lunule defined by black and concave towards base in cell before the reniform, which is represented by a whitish and yellow spot defined by a few black scales; postmedial line white, strongly bent outwards below costa, then dentate and produced to brown and white streaks on the veins, incurved at discal fold, oblique below vein 4 and incurved at vein 2, the costa beyond it blackish with white points on it; subterminal line white, dentate; a terminal series of small blackish lunules defined by white on inner side; cilia tipped with white and black towards tornus. Hind wing pale wholly suffused with fuscous brown; cilia golden yellow slightly mixed with fuscous towards apex; the underside pale ochreous irrorated with brown, a dark discoidal spot, sinuous postmedial line, and diffused subterminal band.

Hab. Sikhim (*Möller*), 2 ♂ type. *Exp.* 32 millim.

2888. Trachea auroviridis. (Plate CXI. fig. 9.)

Hadena auroviridis, Moore, P. Z. S. 1867, p. 59, pl. 6. f. 11; Hmpsn. Moths Ind. p. 215.

♂. Head and thorax olive-green; sides of palpi and frons blackish; patagia tipped with rufous; pectus rufous mixed with fuscous hair, the tibiæ and tarsi banded with black; abdomen pale rufous slightly tinged with fuscous. Fore wing olive-green; subbasal line represented by white striæ from costa and cell, defined on each side by black; a black patch above inner margin from near base to the antemedial line, which is double, black filled in with white, angled inwards in cell and on vein 1 and bent inwards to inner margin, with black suffusion from it to postmedial line below the cell and vein 2 crossed by a curved white striga representing extremity of claviform; orbicular conical, black defined by white, open below; reniform small, green; the cell between the stigmata black, with a white lunule just before the reniform concave towards base; the area beyond the reniform suffused with black; post-

medial line black defined by white on outer side, strongly bent outwards below costa, then dentate and produced to black and white points on the veins, oblique from vein 4 to 2, then angled outwards again, the costa beyond it black with white points; subterminal line whitish with a black spot before it below costa, then defined by black on outer side, angled outwards at veins 7, 6, 4, 3, 2 and bent outwards to tornus; a terminal series of small black lunules slightly defined by white on outer side; cilia with a series of black points at tips. Hind wing pale wholly suffused with fuscous brown, a slight terminal dark line defined by greyish on inner side; cilia olive-green slightly mixed with fuscous towards apex; the underside paler, with black discoidal lunule, minutely waved postmedial line, and traces of diffused subterminal band.

Hab. Sikkim (*Russell, Möller*), 4 ♂ type. *Exp.* 32 millim.

2889. **Trachea chrysochlora**, n. sp. (Plate CXI. fig. 10.)

Head and thorax olive-green slightly mixed with whitish and black; palpi whitish, blackish at sides except 3rd joint; sides of frons blackish; patagia rufous at tips; pectus and legs rufous mixed with some fuscous, the tibiæ and tarsi banded with black; abdomen fuscous brown, the dorsal crests and anal tuft rufous. Fore wing olive-green; subbasal line represented by white striæ from costa and cell defined on each side by black; a black patch above inner margin before the antemedial line, which is double, black filled in with white, oblique, angled inwards in cell and on vein 1 and bent inwards to inner margin, the area beyond it in and beyond cell and below cell and vein 2 to postmedial line suffused with black; a small whitish tooth from near base of vein 2 representing extremity of claviform; orbicular conical, black, defined by a few black scales and with white bar on outer edge, open below; a slight white lunule concave towards base in cell before the reniform, which is small, green, its lower part suffused with purple-grey and white scales; postmedial line black defined by white on outer side, strongly bent outwards below costa, then dentate and produced to black and white streaks on the veins, oblique from vein 5 to 2, then angled outwards again, the costa beyond it black with white points on it; subterminal line whitish defined by black on inner side towards costa, then on outer side, angled outwards at veins 7, 6, 4, 3, 2 and bent outwards to tornus; a terminal series of small black lunules defined by whitish on inner side; cilia with a series of black points at tips. Hind wing pale, wholly suffused with fuscous brown; cilia olive-green mixed with brown towards tips; the underside whitish irrorated with brown, a black discoidal lunule, curved postmedial line, and indistinct diffused subterminal band.

Hab. Punjab, Dharmsála (*Hocking*), 5 ♂, 3 ♀, type. *Exp.* 34 millim.

2890. Trachea albinota. (Plate CXI. fig. 11.)

Hadena albinota, Moore, P. Z. S. 1867, p. 58; Hmpsn. Moths Ind. ii. p. 215.

Head and thorax olive-green mixed with rufous and dark brown, some of the hairs tipped with white; palpi, pectus, legs, and abdomen dark red-brown, the fore tibiæ fringed with green hair, the tarsi with slight pale rings. Fore wing olive-green largely suffused with dark brown except at base and on terminal area and usually with some pinkish in submedian interspace, the veins with dark streaks irrorated with blue-white; subbasal line oblique, waved, from costa to vein 1, above which there is a small black spot beyond it; antemedial line oblique, minutely waved, angled inwards on vein 1; claviform absent; a small oblique white spot defined by black below origin of vein 2; orbicular and reniform large, olive-green defined by black except below where they are conjoined by a fascia in lower part of cell and diffused below the cell, the former irregularly rounded, the latter with small black spot near inner edge; postmedial line strongly bent outwards below costa, then minutely dentate, excurved to vein 4, then oblique, some white points beyond it on costa; subterminal line pale green, defined on inner side by blackish towards costa and between veins 4 and 2 and on outer side at vein 5, slightly angled outwards at vein 7 and dentate at veins 4, 3, 2, 1; cilia with some white scales at tips. Hind wing dark brown; the underside whitish strongly suffused with brown, a dark discoidal lunule and diffused curved postmedial line.

Hab. Sikhim (*Russell*, *Möller*, *Pilcher*), 5 ♂, 1 ♀, type. *Exp.* 40–44 millim.

2891. Trachea olivacea. (Plate CXI. fig. 12.)

Berrhœa olivacea, Moore, P. Z. S. 1881, p. 357; Hmpsn. Moths Ind. ii. p. 215.

Head and thorax olive-green mixed with red-brown, some of the hairs tipped with white; palpi brown; frons with lateral brown bars; pectus, legs, and abdomen dark brown, fore tibiæ fringed with green hair, the tarsi with pale rings. Fore wing olive-green suffused with reddish brown except on basal and terminal areas, the medial area rather darker, the veins with slight dark streaks irrorated with bluish white; subbasal line represented by double black striæ from costa and cell filled in with green; antemedial line indistinctly double, irregularly waved, oblique, angled inwards on vein 1; claviform absent; an oblique greenish-white spot below base of vein 2; orbicular and reniform pale green irrorated with brown and defined by black except below where they are conjoined by a green fascia in and below cell; an indistinct waved medial line; postmedial line slightly defined by greyish on outer side, strongly bent outwards below costa, then minutely dentate, oblique below vein 4, some white points beyond it on costa; subterminal line green, slightly angled outwards at vein 7 and dentate at veins

4, 3, 2, 1, a blackish patch beyond it at discal fold; a terminal series of small black lunules. Hind wing dark reddish brown, the basal inner area rather paler; cilia grey at base and tips; the underside whitish, the costal and terminal areas irrorated and suffused with brown, a discoidal spot, curved postmedial line, and diffused subterminal band.

Hab. Sikhim (*Möller*, *Dudgeon*, *Pilcher*), 6 ♂, 5 ♀, type. *Exp.* 36–48 millim.

2892. **Trachea venosa.** (Plate CXI. fig. 13.)

Dianthœcia venosa, Moore, Lep. Atk. p. 124 (1882); Hmpsn. Moths Ind. ii. p. 220.

♂. Head and thorax olive-green mixed with some rufous and black scales; palpi brown except at tips; patagia with black patch at base and rufous tips; pectus and legs brown mixed with ochreous and rufous; abdomen dark brown. Fore wing olive-green suffused in parts with rufous especially in submedian interspace and on postmedial area, the veins with some white scales; subbasal line represented by double black striæ from costa and cell with white point between them on costa, a black patch beyond it above inner margin; antemedial line sinuous, interrupted, represented by double black striæ from costa and in submedian interspace, with white point between them on costa, a mark in cell and excurved mark above inner margin; orbicular and reniform green, defined by black at sides only, the mark between them V-shaped, both oblique oblong, conjoined on median nervure and confluent with a triangular green patch below the cell with some black suffusion before and beyond it; postmedial line double filled in with green, bent outwards below costa, incurved at discal fold, incurved below vein 4, angled outwards at submedian fold, then again incurved, a white point on it at costa and some white points beyond it; subterminal line dentate, with oblique black striga from costa and small triangular mark at vein 5, otherwise only defined by the contrast between the rufous postmedial and green terminal areas; cilia intersected with black at tips. Hind wing reddish brown; cilia with whitish tips except at apex; the underside whitish tinged with brown, the costal area irrorated with brown, a brown streak in cell, small discoidal spot, and postmedial line angled outwards above vein 6.

Hab. Sikhim, 1 ♂ type. *Exp.* 30 millim.

2893. **Trachea literata.** (Plate CXI. fig. 14.)

Dianthœcia literata, Moore, Lep. Atk. p. 124 (1882); Hmpsn. Moths Ind. ii. p. 215.

♂. Head and thorax olive-green mixed with red-brown; palpi brown at sides; tegulæ brown at base; patagia with blackish patches at base and a few black scales near upper edge: pectus and legs brown mixed with grey; abdomen red-brown, the anal tuft rufous, the ventral surface grey irrorated with brown. Fore wing olive-green mostly suffused with rufous and more or less

irrorated with black; subbasal line double filled in with pale yellow, interrupted at the veins, oblique from costa to vein 1, then bent outwards; antemedial line double filled in with pale yellow, angled outwards below costa, on median nervure and vein 1 and inwards in cell and submedian fold, not quite reaching inner margin; claviform large, defined by black; orbicular and reniform pale olive-yellow defined by black at sides only, the mark between them U-shaped, both oblique oblong, conjoined below and confluent with a triangular mark below the cell defined at sides by black, thus forming a Y-shaped mark; a dark striga on middle of costa; postmedial line double filled in with pale yellow, bent outwards below costa, incurved at discal fold, angled outwards at vein 5, then incurved and again excurved in submedian fold, not quite reaching inner margin, some black striæ and pale points beyond it on costa; subterminal line pale, slightly defined by brown on inner side and with blackish patches beyond it above and below middle, slightly angled outwards at vein 7, excurved at middle, then incurved; a series of small triangular black spots on termen; cilia with slight rufous line near base and series of small black spots at tips. Hind wing whitish tinged with reddish brown especially on the veins and terminal area; cilia yellowish with a slight rufous line near base; the underside whiter, the costal area tinged with yellowish and irrorated with brown, a discoidal lunule, curved crenulate postmedial line obsolescent towards inner margin, and terminal series of small lunules.

Hab. Sikhim (*Atkinson*, *Pilcher*), 2 ♂ type. *Exp.* 34–36 millim.

2894. Trachea chalcochlora. (Plate CXI. fig. 15.)

Eurois chalcochlora, Hmpsn. Moths Ind. iv. p. 510 (1896).

♀. Head and thorax whitish tinged with golden olive-green; palpi fuscous brown at sides; antennæ fuscous; fore legs tinged with fuscous, the tarsi fuscous with pale rings; abdomen whitish tinged with fuscous. Fore wing pale golden olive-green, the area between end of cell and termen tinged with rufous; a slight white and black spot at base; subbasal line represented by a white striga from costa and spot in cell; antemedial line slight, olive, angled outwards below costa and excurved below cell; claviform absent; orbicular small, elliptical, with white annulus; reniform with silvery-white annulus broken up into spots and defined by a few dark scales, constricted at middle and angled inwards on median nervure; an indistinct waved medial line oblique from costa to vein 2; postmedial line marked by a double white spot at costa, then defined by white on outer side, strongly bent outwards below costa, then dentate, oblique below vein 4, some white points beyond it on costa; subterminal line represented by a series of small white spots from costa to vein 3, then by a waved line, slightly angled outwards at vein 7, excurved at middle and bent outwards to tornus; a terminal series of black points defined by white on inner side; cilia intersected with whitish. Hind wing whitish tinged with

pink and uniformly irrorated with brown, a slight discoida lunule and sinuous postmedial line defined by whitish on outer side; cilia olive; the underside whitish, the costal area irrorated with olive, a dark discoidal spot, sinuous postmedial line, and diffused subterminal line.

Hab. Sikhim, 5000′ (*Pilcher*), 1 ♀ type. *Exp.* 28 millim.

2895. Trachea atrovirens. (Plate CXI. fig. 16.)

Hadena atrovirens, Moore, P. Z. S. 1867, p. 58; Hmpsn. Moths Ind. ii. p. 219.

Head and thorax olive-green mixed with brown and a few black scales; palpi brown, greyish in front and at tips; frons with lateral brown bars; tegulæ brown and greyish at tips; pectus and legs brown mixed with grey, the tarsi with slight pale rings; abdomen grey-brown. Fore wing olive-green, suffused in parts with brown especially on medial area except towards costa and inner margin, the veins with slight dark streaks irrorated with white; a brown patch on basal inner area; subbasal line double, waved, from costa to vein 1 where it is filled in with white; antemedial line double at costa, then rather oblique and slightly waved, angled inwards on vein 1 and to inner margin; claviform defined by black except above; orbicular and reniform green defined by black at sides and with some dark irroration in centres, both rather oblique oblong; a curved waved medial line; postmedial line double, the outer line indistinct except towards costa, bent outwards below costa, then dentate and produced to white points on the veins, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line green defined on inner side by a dark patch at costa, then by rufous with slight dentate black marks at middle, on outer side by black patches between veins 6 and 4 and in submedian interspace; a terminal series of black lunules; cilia pale rufous with some black scales at tips. Hind wing whitish strongly suffused with brown; a slight postmedial line defined by whitish on outer side and diffused whitish subterminal line except towards apex; cilia pale rufous, whitish at tips; the underside whiter, tinged and irrorated with brown, a small discoidal spot, sinuous postmedial line, and diffused subterminal band.

Hab. Sikhim (*Lidderdale*), 2 ♂, 3 ♀ type; Assam, Khásis. *Exp.* 40–44 millim.

2896. Trachea dinava. (Plate CXI. fig. 17.)

Euplexia dinawa, Beth.-Baker, Nov. Zool. xiii. p. 195 (1906).

♀. Head and thorax greenish grey mixed with red-brown; palpi chocolate-brown at sides; tibiæ chocolate-brown with pale bands; abdomen grey tinged with chocolate-brown. Fore wing sap-green mostly suffused with chocolate-brown leaving the inner margin and terminal area green; subbasal line represented by double dark striæ from costa and cell filled in with green; antemedial line indistinctly double filled in with green, oblique, angled

outwards below costa and above inner margin; claviform small, black-brown with green marks on it; orbicular and reniform green defined by black, the former oblique elliptical with dark point in upper part, the latter oblique with some dark scales in upper and lower parts, the cell before and between them and the area beyond the reniform dark chocolate-brown; traces of an oblique brown line from lower angle of cell to inner margin; postmedial line indistinctly double filled in with green, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, angled outwards in submedian fold and with dark brown mark on inner side; postmedial area dark chocolate-brown between vein 6 and submedian fold and with some whitish points on costa; subterminal line indistinct, pale defined by blackish on inner side, slightly angled outwards at veins 8, 7, 4, 3, 2; the veins of terminal area streaked with brown, a dark brown mark at apex and brown terminal line; cilia grey-green with series of slight brown points at tips. Hind wing greyish suffused with red-brown, the cilia greyer with slight brown line through them; the underside greyish, the costal and terminal areas suffused with red-brown, a brown discoidal spot and curved sinuous postmedial line.

Hab. Br. N. Guinea, Owgarra (*Meek*), 1 ♀, Dinawa, type † ♀ in Coll. Bethune-Baker. *Exp.* 38 millim.

2897. Trachea aurigera. (Plate CXI. fig. 18.)

Berrhæa aurigera, Wlk. xv. 1721 (1858); Hmpsn. Moths Ind. ii. p. 215.
Hadena megastigma, Wlk. xxxiii. 738 (1865).

Head and thorax olive-green mixed with golden brown and dark brown, some of the hairs tipped with white; palpi and sides of frons dark brown with some pale scales; pectus and legs dark brown, some of the hairs tipped with white, the fore tibia fringed with green, the tibia and tarsi with pale rings; abdomen dark brown mixed with whitish especially at base, the crests and anal tuft rufous. Fore wing olive-green mostly suffused with olive-brown and black, the medial area darker except towards costa and inner margin; the terminal area blackish except between veins 4 and 2; the veins with dark streaks irrorated with blue-white scales; subbasal line represented by double black striæ from costa and cell filled in with green, a black mark beyond it above vein 1 and patch on base of inner margin; antemedial line double, oblique, waved; claviform absent; a pale greenish lunule defined by black below origin of vein 2; orbicular and reniform olive-green defined by black except below where they are conjoined by a fascia in and below cell, their centres more or less tinged with brown, the reniform with black spot near inner lower edge; traces of a waved medial line; postmedial line indistinctly double filled in with violaceous grey, strongly bent outwards below costa, then dentate, oblique below vein 4, some white points beyond it on costa; subterminal line green, angled outwards at veins 7, 4, 3 and inwards at discal and submedian folds; a terminal series of small black

lunules; cilia greenish at base, the tips mixed with pale brown, black and white. Hind wing fuscous, the cell and inner area to beyond middle yellowish white; cilia with a fine pale line at base and white tips; the underside with discoidal spot and curved postmedial line.

Hab. Sikhim Tibet, Yatong (*Hobson*), 1 ♂, 5 ♀; Sikhim (*Atkinson*, *Lidderdale*, *Elwes*, *Möller*), 6 ♂, 1 ♀, type *megastigma*. *Exp.* 36–50 millim. Type † in Mus. Oxon.

2898. Trachea microspila, n. sp. (Plate CXI. fig. 19.)

♀. Head and thorax fuscous brown mixed with some white and black scales and with patches of olive-green on vertex of head, tegulæ, patagia, and metathorax; pectus and legs brown irrorated with white, the tarsi with pale rings; abdomen brown irrorated with grey. Fore wing grey-brown irrorated with black and some white, the medial area suffused with olive-green; the basal area with patches of green below costa and cell and above inner margin; subbasal line waved, from costa to a slight black spot above vein 1; antemedial line oblique, waved; traces of a claviform defined by black with small oblique white spot beyond its extremity; orbicular and reniform green slightly defined by black and with more or less brown in centres, the former rather elliptical, the latter large, irregular, constricted at middle; a slight waved medial line oblique from costa to vein 2, then inwardly oblique; postmedial line double at costa, strongly bent outwards below costa, then dentate, very oblique below vein 4, some white points beyond it on costa; subterminal line green, defined on each side by slight black marks and with more or less green suffusion before and beyond it, angled outwards at vein 7, excurved at middle and sharply angled inwards at submedian fold; a terminal series of small black lunules; cilia grey mixed with brown and black. Hind wing with the basal half yellowish white, the terminal half fuscous, the inner area tinged with brown; cilia whitish with a dark line through them; the underside white, the costal and terminal areas irrorated with brown, a black discoidal spot and curved minutely-waved postmedial line with dark band beyond it.

Hab. W. China, Omei-shan, 1 ♀; Punjab, Kulu, Sultanpur (*G. Young*), 1 ♀, Dalhousie (*Harford*), 1 ♀, Dharmsála (*Hocking*), 2 ♀ type. *Exp.* 50–58 millim.

2899. Trachea melanospila. (Plate CXI. fig. 20.)

Trachea melanospila, Koll. Hügel's Kaschmir, iv. p. 480 (1844); Hmpsn. Moths Ind. ii. p. 214; Staud. Cat. Lep. pal. p. 184.

Hadena kosakka, Oberth. Ét. Ent. v. p. 80, pl. 7. f. 4 (1880); Staud. Cat. Lep. pal. p. 184.

Head and thorax olive-green mixed with black, the tegulæ and patagia edged with grey; tarsi with pale rings; abdomen fuscous mixed with grey, segmental lines, dorsal crest and anal tuft olive-

green. Fore wing olive-green irrorated with black, the veins streaked with grey; subbasal line double, black, waved, from costa to vein 1; antemedial line defined by grey on inner side, oblique, minutely waved, bent inwards to inner margin; claviform absent; an oblique triangular white spot below origin of vein 2; orbicular and reniform with brown and black centres and olive-green annuli, the former elliptical with greyish bar beyond it in cell, the latter large, angled inwards on median nervure; an indistinct waved medial line oblique from costa to median nervure, then inwardly oblique; postmedial line defined by grey on outer side, bent outwards below costa, then dentate, incurved below vein 4, some whitish points beyond it on costa; subterminal line green defined on inner side by brown, and with slight dentate black marks below veins 4, 3, angled outwards at veins 7, 6 and inwards in discal fold, excurved at middle and strongly incurved in submedian interspace; a terminal series of small black spots; cilia grey and black intersected with green. Hind wing with the basal area whitish, strongly tinged with brown, the terminal area fuscous brown; an indistinct curved postmedial line; the termen greyish towards tornus; cilia brownish white with a dark line through them; the underside whitish irrorated with brown, an indistinct antemedial line, discoidal spot, curved postmedial line, and diffused subterminal band.

Hab. E. Siberia, Ussuri; C. China, Ichang (*Mrs. Pratt*), 1 ♂; W. China, Chang Yang (*Pratt*), 2 ♀, Omei-shan, 2 ♀, Wa-ssu-kou, 2 ♂; Kashmir, Scinde Valley (*Leech*), 2 ♂; Punjab, Thundiani (*Verbury*), 1 ♂, Simla 1 ♂, Dharmsála (*Hocking*), 5 ♂, 1 ♀. *Exp.* 44–54 millim.

2900. Trachea atriplicis.

Noctua atriplicis, Linn. Syst. Nat. ed. x. p. 517 (1758); Esp. Schmett. iv. pl. 168. ff. 1–3; Hübn. Eur. Schmett., Noct. f. 83; Dup. Lép. Fr. vi. p. 432, pl. 100. f. 1; Curt. Brit. Ent. pl. 431; Steph. Ill. Brit. Ent., Haust. iii. p. 22; Staud. Cat. Lep. pal. p. 184.
Hadena gnoma, Butl. A. M. N. H. (5) i. p. 195 (1878); id. Ill. Het. B. M. ii. p. 32, pl. 31. f. 7.
Trachea similis, Staud. Rom. Mém. vi. p. 456, pl. 9. f. 1 (1892).

Head, thorax, and abdomen brown mixed with grey; vertex of head, tegulæ, and patagia with patches of golden green; tarsi with pale rings. Fore wing golden green irrorated with black, the costa, inner margin, and veins streaked with violaceous grey; subbasal line waved, from costa to vein 1 towards which it is double filled in with white; a blackish mark above inner margin before the antemedial line which is defined by violaceous grey, oblique, waved, angled outwards below costa and bent inwards to inner margin; claviform slightly defined by black at extremity, with an oblique white patch beyond it above and below vein 2, bidentate at extremity; orbicular and reniform green defined by blackish, the former with some fuscous in centre, elliptical, the latter large, irregular, with some fuscous in lower part and slight white line on

inner edge; an indistinct curved waved medial line; postmedial line black strongly defined by violaceous grey on outer side, bent outwards below costa, then dentate, very oblique below vein 4, some white points beyond it on costa; subterminal line greenish white, angled outwards at veins 7, 6, excurved at middle and strongly incurved in submedian interspace; a terminal series of black lunules; cilia fuscous and whitish intersected with white and with blackish lines at middle and tips. Hind wing ochreous whitish

Fig. 29.—*Trachea atriplicis*, ♂. ½.

suffused with brown, the terminal area fuscous brown; cilia ochreous white with a dark line near base; the underside whitish, the costal area irrorated with fuscous, a black discoidal spot and curved postmedial line with diffused brown band beyond it.

Ab. 1. *similis*. Fore wing irrorated with olive-green and spotted with ochreous-yellow.

Ab. 2. Without any green markings.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller and Leech Colls.; Austria; Hungary; Switzerland, Frey Coll.; Spain, Bilboa; Italy; Balkan States; Scandinavia; Russia, Livonia, Zeller Coll.; Armenia; Asia Minor, Bithynia; ? W. Turkestan, Turcomania; E. Siberia, Ussuri; Japan, Oiwake (*Pryer*), 1 ♀, Gifu (*Pryer*), 1 ♀, Nikko (*Ito*), 1 ♀, Yokohama (*Jonas, Maries, Pryer*), 2 ♂, 3 ♀, type *gnoma*. *Exp.* 42–56 millim.

Larva. Meyr. Brit. Lep. p. 128; Barrett, Lep. Brit. v. p. 43, pl. 189. f. 3. Green or reddish brown; dorsal and subdorsal lines darker, interrupted, dotted with white; spiracular line pinkish, sometimes dark-edged above, the margins sometimes whiter; head pale ochreous. Food-plants: *Atriplex, Rumex, Polygonum*, &c. 8–9.

2901. Trachea auriplena.

Trachea atriplicis, Koll. Hügel's Kaschmir. iv. p. 479 (nec Linn.).
Eurois auriplena, Wlk. xi. 557 (1857); Moore, Lep. Ceyl. iii. p. 37, pl. 148. f. 2; Hmpsn. Moths Ind. ii. p. 214.
Hadena lucia, Butl. A. M. N. H. (5) i. p. 195 (1878); id. Ill. Het. B. M. iii. p. 17, pl. 45. f. 2; Staud. Cat. Lep. pal. p. 184.

Head and tegulæ olive-green mixed with dark brown, the latter with some white scales; palpi and lower part of frons dark and

pale brown; thorax fuscous mixed with red-brown and white, the patagia with green fasciæ; fore tibiæ brown mixed with green, the tarsi with pale rings; abdomen grey-brown, the dorsal crests and anal tuft tinged with rufous. Fore wing olive-green irrorated with black, the veins and postmedial area purplish grey, the costa black; subbasal line waved, from costa to a black and white spot above vein 1; antemedial line defined by purplish grey on inner side, oblique, minutely waved; claviform absent; orbicular and reniform with black-irrorated brown centres and green annuli, the former elliptical, the latter large, constricted at middle, an oblique pinkish white patch between them from subcostal nervure to submedian fold; postmedial line double at costa, strongly bent outwards below costa, then dentate, oblique below vein 4, some white points beyond it on costa; subterminal line green expanding into a band on inner side below vein 3 and with green streaks from it to termen between veins 7 and 2, angled outwards at vein 7, excurved at middle and strongly incurved in submedian interspace; a terminal series of small black lunules; cilia green mixed with black. Hind wing with the basal half yellowish white, the terminal half fuscous, the inner area suffused with brown; cilia yellowish white with a brown line through them; the underside with the costal area irrorated with black, a black discoidal spot and sometimes a streak in cell, the termen grey.

Ab. 1. *lucia*. Hind wing with the basal area more or less tinged with brown.

Hab. Japan, Tokio (*Whitely*, *Maries*), 1 ♂, 2 ♀, type *lucia*; Corea, Gensan (*Leech*), 3 ♀; W. China, Omei-shan, 1 ♀, Wa-shan (*Pratt*), 2 ♀, Ni-tou, 1 ♂, 1 ♀, Chia-kou-ho (*Pratt*), 1 ♂, 2 ♀, Pu-tsu-fang, 1 ♂, Ta-chien-lu (*Pratt*), 2 ♀, Mou-pin (*Kricheldorf*), 1 ♂; Kashmir, Scinde Valley (*Leech*), 1 ♂; Punjab, Kulu, Sultanpur (*G. Young*), 1 ♀, Dharmsála (*Hocking*), 2 ♂, 3 ♀, Hurripur (*Yerbury*), 1 ♀; Sikhim (*Lidderdale*), 1 ♀; Madras, Nilgiris (*Swinhoe*, *Lindsay*, *Hampson*), 3 ♂, 3 ♀; Travancore, Pirmád (*Mrs. Imray*), 1 ♂, 1 ♀; Ceylon (*Templeton*), 1 ♀ type. *Exp.* 48–54 millim.

2902. **Trachea leucodonta**, n. sp. (Plate CXI. fig. 21.)

Head and thorax fuscous mixed with black, red-brown and white; palpi black with some white at extremity of 2nd joint; frons with black bars at middle and above; tegulæ with black medial line; tarsi rufous ringed with white; abdomen fuscous mixed with grey, the crests tipped with rufous. Fore wing silvery grey suffused with fuscous and pale olive-brown and irrorated with black; subbasal line represented by double black striæ from costa and cell filled in with white; antemedial line double, black filled in with greyish, oblique, waved; orbicular pale olive defined by black and with slight blackish centre, round, a rather triangular white mark beyond it conjoined to a lunulate white patch below the cell; reniform large, pale olive and whitish defined by black and with

brownish centre; an irregularly waved black medial line defining the white patch; postmedial line double at costa, strongly bent outwards below costa, then lunulate, strongly incurved below vein 4, some white points beyond it on costa; subterminal line indistinct, whitish, excurved below vein 7 and at middle, then strongly incurved, with diffused black patches beyond it below costa, at middle and in submedian interspace; a terminal series of small quadrate black spots; cilia white tinged with olive at base and with black lunules at tips. Hind wing white, the costal and terminal areas broadly black-brown, the inner area black-brown; cilia white mixed with black at tips; the underside with the costal and terminal areas broadly irrorated and suffused with fuscous, an indistinct discoidal spot, and sinuous postmedial line oblique from costa to vein 6.

Ab. 1. Fore wing with the white marks beyond orbicular and below cell replaced by grey.

Hab. Peru, Aqualani (*Ockenden*), 1 ♂, 1 ♀ type. *Exp.* 38–44 millim.

2903. Trachea delicata. (Plate CXI. fig. 22.)

Hadena delicata, Grote, Trans. Am. Ent. Soc. v. p. 92 (1874); Smith, Cat. Noct. N. Am. p. 148.
Hadena interna, Grote, Check List Noctuidæ, p. 20 (1876).

Head and thorax deep purple-brown mixed with more or less olive-green at all events on patagia, some of the scales tipped with grey; pectus, legs, and abdomen brown mixed with greyish ochreous, the tarsi with pale rings. Fore wing purplish fuscous, the interspaces of basal area, the inner margin and the costa towards apex suffused with olive-green; subbasal line represented by a black striga from costa and two below cell; antemedial line oblique, waved; claviform defined by diffused black, acute at extremity; orbicular and reniform with dark centres and green annuli defined by black, the former small, round, the latter large, rather irregular, an oblique purplish-white patch between them from subcostal nervure to vein 2 at postmedial line which is rather indistinct, strongly bent outwards below costa, then dentate, very oblique below vein 4, some whitish points beyond it on costa; subterminal line green slightly defined by black on inner side except towards inner margin, somewhat angled outwards at vein 7 and excurved at middle, then angled inwards and whitish in submedian interspace; a terminal series of small black lunules; cilia fuscous and whitish. Hind wing whitish tinged with fuscous brown, the terminal area fuscous with some whitish on termen from vein 4 to tornus; a terminal series of dark striæ; cilia whitish with a dark line near base; the underside whitish irrorated with brown, the costal area suffused with fuscous, a black discoidal spot and curved postmedial line showing through to upperside.

Ab. 1. *interna*. With hardly a trace of green.

Hab. Canada; U.S.A. Northern, Eastern, Middle and Central States, New York, Evans Center (*Grote*), 3 ♂, 1 ♀ type. *Exp.* 42–44 millim.

2904. Trachea anguliplaga. (Plate CXI. fig. 23.)

Valeria anguliplaga, Wlk. xv. 1718 (1858).

Head and thorax purplish or pinkish brown, the scales tipped with grey; tegulæ with some green scales; patagia with green streak edged by black above; tarsi with pale rings; abdomen reddish or purplish brown. Fore wing purplish or pinkish brown; subbasal line represented by a black striga from costa and double striga filled in with green above vein 1 where there is a slight green streak beyond it; antemedial line minutely waved, oblique from costa to submedian fold and bent inwards to inner margin; claviform represented by some black suffusion and an oblique black line from cell at its extremity; orbicular small, round, with brown centre and green annulus defined by black, an oblique white or pinkish mark beyond it and claviform, somewhat bidentate at lower extremity; reniform large with greyish centre and incomplete green annulus slightly defined by black, a black spot on its inner edge; an indistinct medial line oblique from costa to lower angle of cell, then dentate; postmedial line strongly bent outwards below costa, then dentate, strongly incurved below vein 4, some pale points beyond it on costa; subterminal line green slightly defined by brown on inner side, slightly angled outwards at vein 7, excurved at middle and strongly incurved in submedian interspace, the area beyond it darker with blackish patches at discal and submedian folds; a terminal series of black lunules; cilia greyish and black intersected with whitish at the veins. Hind wing white with slight curved postmedial line, the area beyond it suffused with fuscous; cilia white tinged with ochreous and with slight blackish spots at middle; the underside with the costal area irrorated with brown, the apex tinged with brown, a discoidal point, curved postmedial line, and traces of subterminal line.

Hab. Brazil, Rio Janeiro, 1 ♂; Paraguay, Sapucay (*Foster*), 1 ♀; Argentina (*Thomas*), 1 ♂, 1 ♀. *Exp.* 40–44 millim. Type † in Mus. Oxon.

*2905. Trachea malezieuxi. (Plate CXI. fig. 24.)

Valeria malezieuxi, Dogn. Ann. Soc. Ent. Belg. xli. p. 413 (1897).

♀. Head and thorax red-brown mixed with some black and white scales, the patagia with patches of large black and white scales; tarsi blackish ringed with white; abdomen rufous mixed with grey, the dorsal crests darker. Fore wing violaceous grey mixed with grey and olive-yellow and irrorated with black; double, waved, black, subbasal and antemedial lines filled in with grey, the former from costa to submedian fold; orbicular round, defined by

black, with an oblique whitish band just beyond it from costa to submedian fold; reniform whitish irrorated with brown, and with irregularly waved black edges, expanding above; the postmedial line dentate, strongly bent outwards below costa, where there is a white striga on its outer edge, slightly incurved in discal fold and strongly below vein 4, the area beyond it greyish to the waved whitish subterminal line which is excurved at vein 7 and middle, incurved in discal fold and strongly in submedian fold, where there is a blackish patch beyond it; a terminal series of small quadrate black spots; cilia rufous and white. Hind wing white, the costal and terminal areas brown with a rufous tinge; cilia white, brown at tips except towards tornus; the underside with the costal and terminal areas irrorated and suffused with brown, a slight antemedial brown patch on costal area and black discoidal spot.

Hab. Ecuador, Loja, type † ♀ in Coll. Dognin. *Exp.* 36 millim.

2906. Trachea uscana.

Valeria uscana, Druce, Biol. Centr.-Am., Het. i. p. 292, pl. 27. f. 23 (1889).

♀. Head and thorax olive-green mixed with some black; tarsi brown with pale rings; abdomen brownish ochreous. Fore wing olive-green suffused with red-brown except costal and inner areas, and irrorated with black, the veins streaked with grey; subbasal line double, angled inwards in cell and ending at vein 1; a blackish mark above inner margin before the antemedial line which is double, minutely waved, angled outwards below costa and excurved from cell to inner margin; claviform represented by some blackish suffusion and an oblique black line from cell at its extremity; orbicular elliptical, with black centre and green annulus defined by black, an oblique ill-defined pinkish-white mark beyond it and claviform somewhat bidentate at lower extremity; reniform very large, its upper extremity dilated and produced, pinkish white suffused partly with red-brown and with slight whitish annulus defined by black, a black spot near its lower inner edge and some dark suffusion beyond it; an indistinct medial line oblique from costa to lower angle of cell, then dentate; postmedial line double, bent outwards below costa, then with its inner line formed of small black lunules and with series of black and white points beyond it, slightly incurved at discal fold, incurved below vein 4, some grey suffusion beyond it between veins 8 and 4 and some whitish points on costa; subterminal line green, with some whitish points at middle, defined on inner side by red-brown suffusion and with blackish patches beyond it at discal and submedian folds, excurved below vein 7 and at middle and angled inwards in submedian fold; a series of black striæ just before termen; a fine waved terminal line; cilia green with waved black lines at middle and tips interrupted at the veins. Hind wing whitish suffused with fuscous brown except costal and inner areas to postmedial line; cilia green

with blackish marks at tips; the underside whitish irrorated with brown, the terminal area suffused with brown, a black discoidal spot and curved postmedial line.

Hab. Costa Rica, Irazu (*Rogers*), 3 ♀, Rio Sucio (*Rogers*), 3 ♀ type, Godman-Salvin Coll. *Exp.* 46–50 millim.

2907. Trachea tociensis. (Plate CXI. fig. 25.)

Hadena tokiensis, Butl. Trans. Ent. Soc. 1881, p. 186.

♀. Head and thorax olive-green mixed with black; pectus, legs, and abdomen fuscous mixed with brownish ochreous, the tarsi with pale rings. Fore wing violaceous grey irrorated with brown, the basal area, slight suffusion on medial area, the area before subterminal line, and streaks in interspaces of terminal area olive-green; subbasal line waved, from costa to vein 1; antemedial line defined by grey on inner side, oblique, waved; claviform small or moderate, defined by black; orbicular and reniform green defined by black and with some blackish in centres, the former small, round, the latter large; an indistinct oblique waved medial line from lower angle of cell to inner margin; postmedial line defined by grey on outer side, bent outwards below costa, then dentate, incurved below vein 4, some whitish points beyond it on costa; subterminal line green, diffused inwards to the postmedial line at discal fold and from vein 3 to inner margin, angled outwards at veins 7, 6, inwards in discal fold, excurved at middle and strongly incurved in submedian interspace; a terminal series of small black lunules; cilia green mixed with blackish. Hind wing with the basal half whitish tinged and irrorated with brown, the terminal half fuscous, a curved postmedial line, some greyish on termen towards tornus; cilia ochreous with a blackish line through them; the underside whitish, the costal and terminal areas irrorated with brown, a discoidal spot, curved crenulate postmedial line, and diffused subterminal line.

Hab. Japan, Hakodaté (*Andrews*), 2 ♀, Tokio (*Maries*), 1 ♀ type. *Exp.* 46 millim.

2908. Trachea chlorogrammata. (Plate CXI. fig. 26.)

Euplexia chlorogrammata, Hmpsn. J. Bomb. Nat. Hist. Soc. xiv. p. 200 (1902).

Head and thorax olive-green slightly mixed with brown; palpi blackish and ochreous, frons with lateral black bars; pectus and legs brown and ochreous, the tibiæ with some green, the tarsi with pale rings; abdomen brown mixed with grey. Fore wing pale brown and fuscous, the costa, inner margin, and a patch beyond reniform suffused with yellow-green; subbasal line double filled in with green, from costa to vein 1; antemedial line double filled in with green, slightly angled outwards below costa, then minutely waved; claviform defined by black; orbicular and reniform with brown centres and green annuli defined by black, the former round;

an indistinct medial line oblique from costa to vein 2, then sinuous; postmedial line double filled in with green, bent outwards below costa, then minutely waved, slightly incurved at discal fold, oblique below vein 4 and bent outwards to inner margin, some green points beyond it on costa; subterminal line strong, green, slightly excurved below vein 7 and at middle; a terminal series of small black lunules; cilia with green line at base and intersected with green. Hind wing ochreous white tinged with brown, the terminal area suffused with fuscous leaving some whitish on termen towards tornus; cilia whitish with a fuscous line through them; the underside ochreous white, the costal area irrorated with fuscous, the terminal area suffused with fuscous, a discoidal spot and curved postmedial line.

Hab. Sikhim (*Dudgeon*, *Pilcher*), 1 ♂, 1 ♀ type. *Exp.* 44 millim.

2909. Trachea lucia.

Hadena lucia, Feld. Reis. Nov. pl. 109. f. 16 (1874).

♀. Head and thorax olive-yellow; palpi blackish at sides except at tips; antennæ black; tegulæ at tips and patagia above leaden grey; pectus brown; tibiæ and tarsi grey-black ringed with ochreous; abdomen grey-brown. Fore wing dark leaden grey with slight pale irroration; subbasal line represented by double black striæ from costa and cell filled in with olive-green and with slight olive-green and black mark beyond them in cell; antemedial line indistinctly double filled in with olive-green, rather oblique, waved, interrupted below costa and at vein 4; claviform small or moderate, defined by black; orbicular and reniform with olive-green annuli defined by black, the former rather oblique elliptical and confluent with a spot below cell, the latter constricted at middle and narrowing below; postmedial line defined by olive-green on outer side, double at costa, bent outwards below costa, then waved, incurved at discal fold and below vein 4, some pale points beyond it on costa; subterminal line formed of olive-green striæ defined by somewhat dentate black marks on inner side stronger above middle, where it is slightly excurved, with slight green and black streaks beyond it in the interspaces to the terminal series of lunules. Hind wing greyish fuscous, the cilia with a slight pale line at base; the underside whitish, the costal area except at base and the terminal area broadly suffused with leaden grey, a slight discoidal lunule and curved postmedial line.

Hab. Br. E. Africa, Uganda Ry., Mile 478 (*Betton*), 1 ♀; Mashonaland, Salisbury (*Marshall*), 3 ♀; Cape Colony, Transkei (*Miss F. Barrett*), 1 ♀, Knysna. *Exp.* 38-44 millim.

*2910. Trachea pratti. (Plate CXI. fig. 27.)

Epa pratti, Beth.-Baker, Nov. Zool. xiii. p. 193 (1906).

♂. Head and thorax pale grey-green; palpi at tips and frons ochreous white, the latter with black lateral bars; patagia edged

with black except on inner side towards base; dorsum of thorax ochreous white, the pro- and metathoracic crests with black spots at sides; pectus grey mixed with brown; tibiæ ochreous spotted with black, the tarsi fulvous; abdomen ochreous tinged with brown. Fore wing grey-white, the costal half of basal area, the inner antemedial area and postmedial area below vein 4 sap-green; the antemedial area below costa and cell, medial area from costa to median nervure, postmedial area to vein 4 and apex suffused with black-brown; an oblique black mark from base of costa to the subbasal line, which is double, black filled in with white, minutely waved, the inner line ending at submedian fold, the outer extending to just above inner margin; antemedial line double, black filled in with ochreous and with silvery white at costa, defined on inner side by some silvery white, slightly angled outwards below costa, then waved; claviform absent; orbicular and reniform small, ochreous, the former oblique elliptical, the latter undefined below, some deep black before, between and beyond them; an oblique brown line from lower angle of cell to inner margin, slightly angled outwards on vein 1; postmedial line double, black filled in with silvery white, oblique and sinuous to vein 4, then dentate, bent inwards to below vein 3, then erect, some white points beyond it on costa; subterminal line grey-green slightly defined on each side by blackish and on inner side by black lunules from costa to vein 5, angled outwards at vein 7 and slightly excurved at middle; some small black spots on termen towards apex; cilia ochreous intersected with blackish, wholly blackish at apex. Hind wing ochreous white, the terminal area suffused with brown; cilia white with a brown line through them from apex to vein 2; the underside with the costal area irrorated with brown, the terminal area suffused with brown from apex to vein 2, a small discoidal spot and lunulate postmedial line from costa to vein 2.

Hab. Br. N. Guinea, Dinawa (*Pratt*), type † ♂ in Coll. Bethune-Baker. *Exp.* 36 millim.

2911. Trachea viridis.

Celæna viridis, Druce, Biol. Centr.-Am., Het. ii. p. 479, pl. 93. f. 24 (1898).

♂. Head and thorax pale olive-green mixed with some rufous and black scales; palpi tinged with black at sides; pectus with some white hair, the tarsi black with pale rings; abdomen fuscous brown, whitish at base, the dorsal crests, anal tuft, and ventral surface pale rufous. Fore wing pale blue-green suffused in parts with rufous; some black irroration at base; subbasal line represented by black striæ from costa and cell, emitting a minute streak below the cell where it is followed by a white patch with some pink scales on it; antemedial line white, defined by black on outer side towards costa and in submedian interspace, angled outwards below costa and excurved at median nervure and above inner margin; claviform absent; orbicular a small black spot partially

ringed with white; reniform a black lunule ringed with white; a diffused fuscous medial shade; postmedial line white defined by black on inner side except from below costa to vein 6, slightly bent outwards below costa, then minutely waved, oblique from vein 4 to submedian fold, then excurved, some white points with black striæ between them beyond it on costa and some patches of rufous between vein 5 and inner margin; subterminal line white with black marks before it between veins 7 and 5 and slight spots before it at middle, oblique from costa to discal fold, excurved at middle and angled inwards in submedian fold; a terminal series of small black lunules defined by white on inner side; cilia rufous tinged with black at middle. Hind wing black with a cupreous gloss, the cilia pale rufous; the underside whitish irrorated with fuscous, the costal area with olive-yellow, a small discoidal spot, irregularly crenulate postmedial line, and diffused subterminal line.

Hab. Costa Rica, Candelaria Mts. (*Underwood*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 28 millim.

*2912. Trachea smaragdina. (Plate CXI. fig. 28.)

Hadena smaragdina, Neum. Papilio, iii. p. 140 (1883); Smith, Cat. Noct. N. Am. p. 145.

♂. Head and thorax blackish grey; pectus, legs, and abdomen grey tinged with fuscous. Fore wing brown suffused with emerald-green, especially on basal, costal, and terminal areas; subbasal line represented by double black striæ from costa and cell filled in with green; antemedial line double, black filled in with green, bent outwards at median nervure, then sinuous; claviform green defined by black; orbicular and reniform green defined by black, the former round, the latter somewhat excised towards base; a curved brown medial shade; postmedial line black defined by some green on outer side, double at costa, bent outwards below costa and incurved below vein 4, some white points beyond it on costa; subterminal line green defined on inner side by blackish suffusion, excurved below vein 7 and at middle; a terminal series of small black lunules; cilia with a fine dark line near base. Hind wing greyish, the terminal area broadly suffused with brown; a fine dark terminal line; the underside grey-white, the costal and terminal areas darker, a small discoidal spot and curved postmedial line.

Hab. U.S.A., S.W. Arizona. *Exp.* 30 millim. This species is unknown to me; figured from drawing from specimen in Coll. J. B. Smith.

*2913. Trachea viridimusca. (Plate CXI. fig. 29.)

Hadena viridimusca, Smith, Can. Ent. xxxi. p. 264 (1899); Dyar, Cat. Lep. N. Am. p. 114.

Head and thorax brown irrorated with fuscous; frons pale; tegulæ with black medial line; metathoracic crest whitish;

abdomen fuscous with whitish segmental lines. Fore wing brown with a fuscous tinge and more or less suffused with yellow-green, especially on basal, terminal, and part of postmedial areas; subbasal line double, black filled in with whitish, sinuous, from costa to submedian fold; antemedial line double, black filled in with white, expanding at costa, erect, waved, excurved at submedian fold and running inwards as a short streak on inner margin; claviform green defined by black; orbicular and reniform green defined by black, the former small, round, the latter somewhat constricted at middle; medial shade incurved from lower angle of cell to inner margin; postmedial line double filled in with whitish, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line defined by brown suffusion on inner side, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules; cilia with a series of pale or yellowish marks at base. Hind wing deep fuscous brown, slightly paler at base; cilia with a pale line at base; the underside grey with dark irroration, the terminal area paler, a black discoidal spot and postmedial line.

Hab. U.S.A., New Jersey, Ohio, Columbus, Texas. *Exp.* 32 millim. This species is unknown to me; figured from a drawing from type in Coll. J. B. Smith.

*2914. Trachea eugrapha. (Plate CXI. fig. 30.)

Trachea eugrapha, D. Jones, Trans. Ent. Soc. 1908, p. 158.

♂. Head and thorax red-brown mixed with black; tegulæ with black line near tips and black tips; tarsi banded with black; abdomen pale red-brown, dorsally tinged with fuscous, the genital tufts white. Fore wing red-brown tinged with grey, irrorated and in parts suffused with fuscous, some green on terminal half of inner margin; subbasal line indistinct, double, waved, from costa to submedian fold; antemedial line double filled in with greenish, waved, oblique from costa to submedian fold, then inwardly oblique and angled inwards on vein 1; claviform short and broad, defined by black; orbicular with faint pale annulus slightly defined by blackish, oblique elliptical, confluent with the antemedial line; reniform defined by black, constricted at middle; a strong highly curved medial black line; postmedial line double, indistinct except towards costa, bent outwards below costa, then dentate and produced to a series of black points on the veins, excurved to vein 4, then incurved to lower edge of reniform and approximated to the medial line, some pale reddish points beyond it on costa; subterminal line greyish, slightly defined by fuscous suffusion on inner side, excurved below vein 7, excurved and minutely waved at middle, small wedge-shaped black marks before and beyond it above and below vein 5 and some fuscous suffusion beyond it towards tornus; a terminal series of black points. Hind wing brown, the terminal area darker; cilia whitish with brown tips towards apex and brown marks at middle; the underside whitish irrorated with

brown, the terminal area suffused with brown, a black discoidal spot, indistinct waved postmedial line, and series of slight blackish terminal lunules.

Hab. Brazil, Castro Paraña, type† in Coll. D. Jones. *Exp.* 32 millim.

2915. Trachea nitens.

Spælotis nitens, Butl. A. M. N. H. (5) i. p. 164 (1878); id. Ill. Het. B. M. ii. p. 27, pl. 29. f. 8.
Nænia muscosa, Butl. A. M. N. H. (5) i. p. 290 (1878); id. Ill. Het. B. M. iii. p. 24, pl. 46. f. 9.

Head and thorax reddish brown mixed with greyish, the head paler; palpi blackish except at tips; patagia pale at base with slight dark medial line; tarsi blackish with pale rings; abdomen greyish suffused with brown, the dorsal crests blackish. Fore wing reddish brown, the basal area and a patch in submedian interspace beyond postmedial line grey irrorated with black and tinged with olive-green; subbasal line double, filled in with whitish, waved, from costa to submedian fold; antemedial line double filled in with whitish, waved, somewhat oblique; claviform represented by a slight blackish mark; orbicular and reniform greyish slightly defined by fuscous, the former round; medial line represented by diffused blackish marks on costa and in cell and a faint waved line below cell; postmedial line indistinctly double filled in with whitish, bent outwards below costa, then minutely waved, obliquely excurved to vein 4, then incurved and forming a blackish mark in submedian fold, some white points beyond it on costa; subterminal line white defined on inner side by slight dentate dark marks, excurved below vein 7, excurved and minutely waved at middle, angled inwards in discal fold; a terminal series of small black lunules. Hind wing greyish, nearly uniformly suffused with brown; a faint sinuous postmedial line; a whitish patch on termen towards tornus; the underside whitish irrorated with brown, the costal and terminal areas suffused with brown, a small discoidal spot, sinuous postmedial line, and diffused subterminal band.

Hab. Japan, Hakôdaté (*Andrews*), 3 ♂, Oiwaké (*Pryer*), 1 ♂, 2 ♀, Nikko (*Lewis*), 1 ♂, Tokio (*Maries*), 4 ♂, 1 ♀, Yokohama (*Jonas*, *Pryer*), 4 ♂, type and type *muscosa*. *Exp.* 36–42 millim.

2916. Trachea jancousci.

Hadena jankowskii, Oberth. Diag. p. 14 (1879); id. Ét. Ent. v. p. 79, pl. 3. f. 11; Staud. Cat. Lep. pal. p. 174.

Head and thorax black-brown mixed with pale rufous and whitish; palpi blackish except at tips; frons with lateral black bars; tegulæ yellowish at base; pro- and metathoracic crests with black patches; tarsi black ringed with white; abdomen grey-brown, yellowish white at base, the dorsal crests blackish. Fore wing yellowish white suffused with olive, the costal area broadly and the medial area, except sometimes below submedial fold, suffused

with fuscous brown, the terminal area fuscous brown; subbasal line double filled in with yellowish white, dentate, from costa to submedian fold, where there is a small black spot on its outer edge, a slight white mark beyond it in cell; antemedial line double filled in with yellowish white, angled outwards below costa, incurved to median nervure, then obliquely excurved; claviform represented by a blackish mark; orbicular greyish defined by black, small, elliptical; reniform white defined by black and with some fuscous in centre, constricted at middle and somewhat angled inwards on median nervure; faint traces of a diffused medial line oblique from costa to median nervure: postmedial line double filled in with yellowish white, bent outwards below costa, then dentate and produced to black and white points on the veins, obliquely incurved below vein 4, some white points beyond it on costa; subterminal line white slightly defined by brown on inner side, excurved below vein 7 and at middle, angled inwards in discal fold; a terminal series of small black lunules; cilia greyish with slight dark medial line. Hind wing yellowish white suffused with brown; a slight dark postmedial line defined by whitish on outer side; a fine dark terminal line; cilia white with a fuscous line through them; the underside greyish tinged with brown, the costal area irrorated with brown, a small discoidal spot, strong postmedial line, and diffused subterminal band.

Hab. E. Siberia, Ussuri, 12 ♂, 1 ♀, Leech and Crowley Colls.; Corea, Gensan (*Leech*), 2 ♀. *Exp.* 38–44 millim.

2917. **Trachea marina.** (Plate CXI. fig. 31.)

Hadena marina, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 67 (1874); Smith, Cat. Noct. N. Am. p. 145.

Head and thorax sap-green mixed with brown and grey; palpi with some black scales; tegulæ with slight dark medial line; patagia green edged with brown and grey; pectus, legs, and abdomen whitish mixed with brown, the tarsi banded with black. Fore wing sap-green irrorated with black and tinged in parts with olive-brown, the veins streaked with purplish grey and irrorated with white; subbasal line black defined by whitish on outer side, waved, from costa to vein 1, with a black mark below it on inner margin; antemedial line defined by whitish on inner side, oblique, irregularly waved; orbicular and reniform small, with green centres and white annuli defined by a few black scales, the former round, the latter somewhat angled inwards on median nervure; an indistinct medial line oblique from costa to vein 2, then waved; postmedial line strongly bent outwards below costa, then dentate, incurved below vein 4, some black streaks and white points beyond it on costa; subterminal line slight, whitish, defined on inner side by dark suffusion towards costa and at middle and on outer side at discal fold, angled outwards at vein 7, excurved at middle and incurved at discal and submedian folds; a terminal series of small black lunules; cilia black and grey. Hind wing pale, wholly

suffused with fuscous brown; a waved dark terminal line; cilia white with a dark line through them; the underside white irrorated with brown, a dark discoidal spot and curved subterminal line.

Hab. U.S.A., California, Sauzalito, 2 ♂, 1 ♀ type. *Exp.* 36 millim.

2918. Trachea miselioides. (Plate CXI. fig. 32.)

Hadena miselioides, Guen. Noct. ii. p. 89 (1852); Herr.-Schäff. Aussereur. Schmett. f. 212; Smith, Cat. Noct. N. Am. p. 145.
Hadena miscellus, Smith, J. N.Y. Ent. Soc. x. p. 40 (1902).

Head and thorax sap-green mixed with brown and grey; palpi grey and black mixed; frons with lateral black bars; tegulæ blackish at base and with black and grey medial line; tegulæ green at middle defined by black and edged with brown and grey; tibiæ and tarsi banded with black; abdomen brown and grey. Fore wing sap-green suffused in parts with olive-brown, the veins streaked with grey and irrorated with white; subbasal line waved, black, from costa to vein 1 towards which it is double, and with black mark and white striga below it on inner margin; antemedial line double at costa, oblique, irregularly waved, bent inwards to inner margin; claviform faintly defined by black and usually with diffused blackish streak below it to postmedial line; orbicular green with slight pale annulus defined by black, round; reniform with white centre, often more or less completely suffused with reddish and defined by black, the annulus defined from centre by a more or less incomplete grey line; an indistinct medial line oblique from costa to vein 2, then waved; postmedial line indistinctly double filled in with whitish, bent outwards below costa, then dentate, excurved to vein 5, then incurved, some pale points beyond it on costa; subterminal line indistinct, pale defined on inner side by slight dentate brown marks, slightly excurved below vein 7 and at middle; a terminal series of black points; cilia fuscous and grey intersected with green. Hind wing fuscous, the base and inner margin somwhat paler; a dark postmedial line defined by whitish on outer side and with black striga above tornus; cilia greenish white with dark line through them; the underside white irrorated with brown, a black discoidal lunule, irregularly crenulate postmedial line, diffused subterminal band, and terminal series of small black lunules.

Ab. 1. *miscellus.* Fuscous black brown and grey with hardly any green.

Hab. U.S.A., east of Rocky Mts., New York, Evans Center (*Grote*), 2 ♂, 3 ♀, Distr. of Columbia, Alabama, 1 ♀, Florida, St. John's Bluff (*Doubleday*), 2 ♂, 1 ♀ type, Kansas (*Snow*), 1 ♂, 1 ♀, Texas, Dallas (*Boll*), 1 ♂, 4 ♀. *Exp.* 34–40 millim.

Larva. Dyar, Can. Ent. 1899, p. 286.

Head testaceous green, small; 12th somite sharply humped; body translucent velvety green irrorated with whitish subventrally; a somewhat broad diffused rather faint white stigmatal line; tubercles i. and ii. and a dot before ii. distinct, pale yellow with dark green

annuli, iv. to vi. and a dot before spiracle white; iv. opposite upper edge of spiracle except on somite 12 where it is below the lower edge. Food-plant, *Smilax rotundifolia*.

*2919. Trachea macerata. (Plate CXII. fig. 1.)

Hadena macerata, Smith, J. N.Y. Ent. Soc. x. p. 40 (1902); Dyar, Cat. Lep. N. Am. p. 116.

♀. Head green, yellow, and blackish mixed; tegulæ dark brown at base, yellow-green at tips with a black line near tips; thorax yellow-green mixed with black and white, the metathoracic crest tipped with yellow; abdomen grey tinged with fuscous. Fore wing mottled with yellow and greenish scales, the medial area darker; subbasal line double, interrupted, from costa to vein 1, the inner line angled inwards to base on median nervure; antemedial line double, much interrupted, somewhat excurved; claviform small, black, acute at extremity, with a dark shade from it to postmedial line; orbicular with greenish centre and white annulus, oblique elliptical; reniform white, elliptical; a dark medial shade, oblique from costa to below reniform, then erect; postmedial line double, the inner line black, the outer grey, interrupted, bent outwards below costa and oblique below vein 4; terminal area with yellowish elliptical patches in the interspaces and greyish streaks on the veins, the subterminal line absent; a terminal series of black points; cilia brown intersected with whitish. Hind wing fuscous, somewhat paler towards base; the underside grey with dark irroration, a blackish discoidal spot and diffused postmedial and subterminal bands.

Hab. Canada, Manitoba, Cartwright, Winnipeg. *Exp.* 34 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

2920. Trachea semilunata. (Plate CXII. fig. 2.)

Hadena semilunata, Grote, Papilio, i. p. 58 (1881); Smith, Cat. Noct. N. Am. p. 141.

♀. Head, thorax, and abdomen grey mixed with fuscous; anal tuft ochreous. Fore wing fuscous irrorated with white; subbasal line defined by whitish on outer side, waved, from costa to submedian fold, in base of which there are traces of a black streak; antemedial line defined by white on inner side, oblique, waved; claviform incompletely defined by black and with bidentate black mark beyond it; orbicular with undefined diffused white annulus, rounded; reniform with blackish centre and white annulus partly defined by black; traces of a waved medial line, oblique from costa to vein 2; postmedial line defined by white on outer side, slightly bent outwards below costa, then minutely dentate and produced to short streaks on the veins, oblique to vein 6 and inwardly oblique below vein 5, some white points beyond it on costa; subterminal line strong, white, defined on inner side by slight dentate blackish

marks, angled outwards at vein 7 and dentate to near termen at veins 4, 3; a terminal series of slight blackish lunules; cilia intersected with white. Hind wing whitish suffused with orange-yellow, the veins and costal area irrorated with fuscous; a large discoidal lunule and traces of postmedial line with dark points on the veins; terminal area fuscous; cilia white, yellowish at base and with fuscous line through them except towards tornus; the underside white, the veins of terminal area irrorated with fuscous, a large black discoidal lunule and postmedial series of short dark streaks on the veins.

Hab. U.S.A., Washington, 1 ♀ type, Colorado. *Exp.* 34 millim.

2921. Trachea inordinata. (Plate CXII. fig. 3.)

Hadena inordinata, Morr. Proc. Acad. Nat. Sci. Phil. 1875, p. 63; Smith, Cat. Noct. N. Am. p. 141.
Xylophasia montana, Smith, Proc. U.S. Nat. Mus. xiii. p. 444 (1890).

Head and thorax pale rufous mixed with dark brown and white scales; tegulæ with slight dark medial line; tarsi fuscous ringed with white; abdomen grey-white tinged with rufous and irrorated with brown, the ventral surface white. Fore wing grey-white suffused with brown and irrorated with black, the medial area pale rufous beyond and below cell; subbasal line represented by double black striæ from costa and submedian fold; a slight black streak below base of cell and another above inner margin before the antemedial line, which is double filled in with white, angled outwards below costa and in cell and inwards on median nervure, then strongly excurved and retracted to inner margin; claviform incompletely defined by black, with pale bidentate mark beyond it and black streak from its lower edge to postmedial line; orbicular with white annulus partly defined by black, very oblique elliptical; reniform with greyish centre and slight whitish annulus partly defined by black; an indistinct medial line oblique from costa to vein 2, then dentate; postmedial line double filled in with white, bent outwards below costa, then dentate, oblique below vein 5, some white points beyond it on costa; the veins of terminal area with fine dark streaks, the postmedial area whitish except towards costa; subterminal line white, defined on inner side by dentate black marks strongest at middle, angled outwards at vein 7 and dentate to termen at veins 4, 3; a terminal series of small black lunules; cilia chequered fuscous and white. Hind wing whitish suffused with fulvous yellow, the veins and terminal area fuscous; a blackish discoidal lunule and curved postmedial line; cilia white; the underside white tinged with fulvous, a black discoidal lunule and traces of postmedial and subterminal lines, the latter with minute dark streaks on the veins, a black terminal line.

Ab. 1. Head and thorax without rufous tinge; fore wing darker, with less rufous on medial area; hind wing yellower.—Br. Columbia.

Ab. 2. *montana*. Fore wing paler, the markings hardly defined by black, the dentate marks before subterminal line slight.—Colorado.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), 1 ♂, Br. Columbia, Upper Keremeos (*Mrs. Nicholl*), 1 ♀; U.S.A., Massachusetts, 1 ♂, Colorado (*Bruce*), 1 ♂. *Exp.* 40–42 millim.

2922. Trachea leucodon.

Hadena leucodon, Ev. Bull. Soc. Mosc. 1837, p. 37; Frr. Neue Beitr. iv. pl. 359. f. 1; Dup. Lép. Fr., Suppl. iii. p. 325, pl. 30. f. 2; Herr.-Schäff. Eur. Schmett., Noct. f. 51; Staud. Cat. Lep. pal. p. 173.
Hadena bidens, Ev. Bull. Soc. Mosc. 1852, i. p. 153 & 1856, ii. pl. 2. f. 4.

Head and thorax grey-white mixed with pale brown; frons with lateral blackish bars; patagia with slight blackish line near upper edge; tarsi black ringed with white; abdomen grey-white. Fore wing white suffused with reddish brown and with slight dark irroration, leaving some pure white on inner margin, above vein 1 near base, beyond the postmedial line towards inner margin, and at apex, the veins with slight dark streaks; subbasal line represented by a black striga from costa defined by white on outer side and with a white mark beyond it in cell; a slight oblique blackish streak above inner margin before the antemedial line, which is blackish defined by white on inner side, sinuous and diffused from costa to submedian fold, then strongly excurved and retracted to inner margin; claviform small, defined by black, with whitish dentate mark beyond it; orbicular and reniform with white annuli defined by black, the former small, elongate elliptical, the latter narrow; traces of a medial line towards costa; postmedial line black defined by white on outer side, double at costa, bent outwards below costa, oblique to vein 5, then inwardly oblique and slightly sinuous, some white points beyond it on costa; subterminal line white, defined on inner side by small dentate blackish marks between veins 6 and 1, angled outwards at vein 7, dentate to termen at veins 4, 3, then incurved; a terminal series of small black lunules; cilia intersected with white. Hind wing pale suffused with reddish brown, the terminal area darker; a faint discoidal spot and curved postmedial line; cilia pure white, with slight brown medial line from costa to vein 2; the underside white, the costal area irrorated with brown, a discoidal spot, curved postmedial line, and diffused subterminal band.

Hab. Russia, Sarepta, Zeller and Crowley Colls.; Kurdistan, Malatra; W. Turkestan, Ferghana, Issyk Kul; W. Siberia, Altai; Mongolia, Urga; E. Siberia, Dahuria. *Exp.* 38–42 millim.

2923. Trachea cinefacta. (Plate CXII. fig. 4.)

Hadena cinefacta, Grote, Papilio, i. p. 76 (1881); Smith, Cat. Noct. N. Am. p. 140.

Head and thorax bluish white mixed with pale brown; frons with black bar; tegulæ with medial black line; patagia with blackish lines near edges; tarsi blackish with pale rings; abdomen grey

suffused with brown, the dorsal crests blackish at tips. Fore wing pale brown with slight dark irroration, the basal and postmedial areas, the inner medial area, and apex suffused with bluish white; a sinuous black streak below base of cell; subbasal line represented by slight black striæ from costa and cell; an oblique black streak above inner margin before the antemedial line, which is dentate, oblique from costa to submedian fold, then inwardly oblique; claviform short, oblique, with black streak from its lower edge to postmedial line; orbicular and reniform with pale brown centres and whitish annuli defined by black, the former narrow, oblique elliptical, the latter somewhat produced at lower extremity; traces of an oblique medial shade from costa to lower angle of cell; postmedial line defined by white on outer side, bent outwards below costa, then dentate, angled outwards at vein 5, then oblique and incurved in intermediate interspace, some white spots beyond it on costa; subterminal line represented by slight white marks defined on inner side by small dentate black marks between veins 6 and submedian fold, and with white teeth extending to termen at veins 4, 3; a terminal series of small black lunules; cilia brown intersected with white. Hind wing grey suffused with brown, especially on terminal area; cilia yellowish at base, white at tips, and with slight brown medial line on apical half; the underside whitish irrorated with brown, a slight discoidal spot and sinuous postmedial line.

Ab. 1. Fore wing with the ante- and postmedial lines interrupted and conjoined by white suffusion along vein 1; the subterminal line entire and with hardly a trace of dark dentate marks on either side.—Alberta.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), 1 ♀, Red-deer R. (*Wolley-Dod*), 5 ♂; U.S.A., Washington, 1 ♀ type, Colorado, California. *Exp.* 40 millim.

2924. Trachea centralis. (Plate CXII. fig. 5.)

Xylophasia centralis, Smith, Proc. U.S. Nat. Mus. xiii. p. 441 (1890); id. Cat. Noct. N. Am. p. 140.

♂. Head and thorax reddish brown mixed with white scales; frons with black bar; tegulæ with black medial line and whitish tips; patagia with some black scales near edges; tarsi blackish ringed with white; abdomen brown mixed with whitish, the dorsal crests dark at tips. Fore wing reddish brown suffused with bluish white, the basal and postmedial areas and apex almost entirely white, medial and terminal areas browner, the veins with slight dark streaks; subbasal line waved, from costa to submedian fold; a sinuous black streak below base of cell and an oblique streak above inner margin before the antemedial line, which is dentate, oblique from costa to submedian fold, strongly angled outwards in submedian fold and above inner margin and inwards on vein 1; claviform slightly defined by black, acute at extremity and with

black streak from its lower edge to postmedial line; orbicular and reniform defined by black, the former whitish, oblique elliptical, more or less elongate; an indistinct irregular medial line, oblique from costa to below cell, the area before it sometimes strongly suffused with white from cell to inner margin; postmedial line indistinctly double filled in with white, bent outwards below costa, then dentate, excurved to vein 4, then oblique and incurved in submedian interspace, some white points beyond it on costa; subterminal line white defined on inner side by small red-brown dentate marks, angled outwards at vein 7 and dentate to near termen at veins 4, 3; a terminal series of small black lunules; cilia fuscous and white intersected with white. Hind wing whitish almost entirely suffused with brown, the veins and a terminal line darker; an indistinct diffused dark postmedial line; cilia yellowish white with a slight brown line through them; the underside white irrorated with brown, a slight discoidal lunule and strong sinuous postmedial line.

Hab. U.S.A., Oregon, Corvallis, 1 ♂, Sierra Nevada. *Exp.* 42 millim.

2925. Trachea unita. (Plate CXII. fig. 6.)

Xylophasia unita, Smith, Psyche, xi. p. 54 (1904).

♀. Head and thorax grey tinged with brown and mixed with some black; palpi with two black streaks on 2nd joint; frons with black bar; tegulæ with black medial line and fuscous line near tips which are whitish; patagia with blackish streak and edged with black; pro- and metathoracic crests tipped with black; tarsi fuscous with pale rings; abdomen brownish grey, the dorsal crests black. Fore wing grey tinged with brown, the medial area suffused with brown except at inner margin, the veins of terminal area with slight dark streaks; subbasal line represented by black striæ from costa and cell; a black streak in base of submedian fold; antemedial line double filled in with whitish, the outer line black, the inner faint brownish, angled outwards below costa, oblique to submedian fold, then angled inwards on vein 1 and bent inwards to inner margin; claviform defined by black, elongate, acute at extremity and with black streak from it to postmedial line; orbicular and reniform large, with slight whitish annuli strongly defined by black, the former with white mark on inner side of centre, elongate elliptical and touching middle of latter; a dark medial line oblique from costa to median nervure, then incurved and waved; postmedial line black defined by white on outer side, bent outwards below costa, then minutely dentate and produced to short streaks on the veins, oblique to vein 5, then inwardly oblique and incurved in submedian interspace, some whitish points beyond it on costa; subterminal line white defined on inner side by dentate dark marks at middle, excurved at vein 7, angled outwards at veins 4, 3 and inwards at discal and submedian folds, with brown streaks beyond it in the interspaces to the terminal series of small black lunules;

cilia fuscous intersected with whitish and with whitish line at base. Hind wing greyish suffused with reddish brown, the veins rather darker; an indistinct curved postmedial line defined by greyish on outer side and traces of a diffused subterminal band; a terminal series of slight dark lunules; cilia white tinged with rufous and with slight brown line through them; the underside grey irrorated with brown, a black discoidal point and diffused curved postmedial line.

Hab. CANADA, Alberta, Calgary; U.S.A., Oregon (*Walsingham*), 1 ♀, Corvallis. *Exp.* 42 millim.

*2926. Trachea sora. (Plate CXII. fig. 7.)

Hadena sora, Smith, Can. Ent. xxxv. p. 133 (1903).

♀. Head and thorax red-brown; palpi, pectus, and legs mixed with whitish; tarsi brown ringed with white; abdomen whitish irrorated with brown, the anal tuft pale rufous. Fore wing bluish grey-white mixed with black-brown and bright rufous, the postmedial area except at costa and the apex pale bluish grey; a slight dark streak below base of cell, subbasal line represented by double black striæ from costa and cell; antemedial line blackish, oblique, waved, bent inwards in cell and angled inwards on vein 1; claviform small, faintly defined by black; orbicular and reniform large, pale, faintly defined, the former oblique elliptical; a faint medial shade, oblique from costa to below cell, then incurved; postmedial line rather indistinct, bent outwards below costa, oblique to vein 6, then inwardly oblique, dentate and somewhat incurved between veins 4 and 2, some white points beyond it on costa; subterminal line indistinct, whitish, defined on inner side by small dentate dark marks at middle, angled outwards at vein 7, dentate to near termen at veins 4, 3, then incurved, the area beyond it brown except at apex; a terminal series of small black lunules; cilia pale with blackish lunules at tips. Hind wing whitish suffused with brown, the cilia ochreous white; the underside whitish irrorated with brown, a blackish discoidal spot, traces of a waved postmedial line and terminal series of dark striæ.

Hab. CANADA, Alberta, Calgary, Br. Columbia, Kaslo (*Dyar*), in U.S. Nat. Mus. *Exp.* 42 millim.

2927. Trachea barnesi. (Plate CXII. fig. 8.)

Hadena barnesii, Smith, Can. Ent. xxxi. p. 258 (1899); Dyar, Cat. Lep. N. Am. p. 115.

Head and thorax bright rufous mixed with some fuscous and a few whitish scales; tegulæ with slight dark medial line; tarsi blackish ringed with ochreous; abdomen greyish mixed with brown, ochreous towards extremity. Fore wing grey-white suffused with ochreous and rufous and irrorated with brown, the medial area bright rufous, the terminal area dark brown except at apex,

the veins with dark streaks; a sinuous blackish streak below base of cell; subbasal line defined by grey on outer side, waved, from costa to submedian fold; antemedial line defined by grey on inner side, angled outwards below costa and excurved in submedian interspace; claviform replaced by a black streak in submedian fold from ante- to postmedial line; orbicular and reniform pale rufous defined by brown, the former small, oblique; a more or less distinct curved dark medial line; postmedial line defined by grey on outer side, bent outwards below costa, then minutely dentate, excurved to vein 5, then very oblique and slightly bent outwards at vein 2, some pale points beyond it on costa; subterminal line whitish defined on inner side by rufous, angled outwards at vein 7 and more or less strongly dentate at veins 4, 3; a terminal series of slight black points; cilia fuscous intersected with ochreous. Hind wing pale uniformly suffused with reddish brown; cilia ochreous with a slight dark line through them; the underside grey irrorated with brown, a dark discoidal spot and curved postmedial line.

Hab. U.S.A., S. Dakota, Wyoming, Yellowstone Park, 1 ♂, 2 ♀, Colorado. *Exp.* 42 millim.

2928. **Trachea lona.** (Plate CXII. fig. 9.)

Hadena lona, Streck. Lep. Rhop. & Het., Suppl. i. p. 7 (1898); Dyar, Cat. Lep. N. Am. p. 115.
Hadena runata, Smith, Can. Ent. xxxi. p. 257 (1899).

♀. Head and thorax brownish grey mixed with black; tegulæ with black medial line; patagia with some black scales near upper edge; tarsi black ringed with whitish; abdomen fuscous mixed with grey, the dorsal crests blackish at tips. Fore wing brownish grey mixed with fuscous and black, the medial and terminal areas darker except towards costa; a sinuous black streak below base of cell; subbasal line represented by a black striga from costa; a diffused oblique black bar from submedian fold to inner margin before the antemedial line, which is defined by grey on inner side, oblique, waved; claviform slightly defined by blackish with a pale patch beyond its extremity and black streak from it to postmedial line; orbicular and reniform whitish grey irrorated with brown, the former round; a waved blackish medial line oblique from costa to below cell; postmedial line defined by grey on outer side, bent outwards below costa, then minutely dentate, excurved to vein 4, then incurved, with some pale points beyond it on costa and whitish patch in submedian interspace; subterminal line grey-white defined on inner side by small dentate black marks at middle, angled outwards at vein 7 and dentate to near termen at veins 4, 3, some black streaks beyond it in the interspaces at middle and a terminal series of small black lunules; cilia fuscous and grey with a fine whitish line at base. Hind wing grey nearly uniformly suffused with fuscous brown; cilia whitish with a fuscous line

through them; the underside whitish irrorated with brown, a sinuous postmedial line.

Hab. Canada, Manitoba; U.S.A., New York, Clyde, Washington, Pullman, 1 ♀. *Exp.* 44 millim.

2929. Trachea turbulenta. (Plate CXII. fig. 10.)

Phosphila turbulenta, Hübn. Zutr. Ex. Schmett. pl. 15. ff. 67, 68 (1827) Smith, Cat. Noct. N. Am. p. 145.
Xylophasia arcuata, Wlk. xi. 718 (1857).

♀. Head, thorax, and abdomen red-brown mixed with dark brown; tarsi blackish with pale rings. Fore wing red-brown suffused and irrorated with black-brown, the medial area darker, the postmedial area rather paler except at costa; a slight black streak in base of submedian fold; subbasal line waved, from costa to submedian fold; a slight black streak above inner margin before the antemedial line, which is angled outwards below costa and above inner margin and excurved below cell; claviform defined by black, small, or large and extending to postmedial line; orbicular and reniform rufous defined by fuscous and their centres by brown, the former small, rather oblique elliptical, the latter pale; an indistinct curved medial line; postmedial line defined by pale rufous on outer side, bent outwards below costa, then rather strongly dentate, excurved to vein 4, then obliquely incurved, some pale points beyond it on costa, and black streaks in the interspaces below costa and fascia in submedian fold, the latter extending to termen; subterminal line very indistinct, pale, defined on inner side by slight dark streaks and dentate marks in the interspaces; a terminal strigiform line. Hind wing pale greyish tinged with brown, the terminal area fuscous brown; a slight discoidal spot, curved postmedial line and fine dark terminal line; cilia brown with an ochreous line at base; the underside pale, irrorated and suffused with red-brown, an indistinct discoidal spot and curved postmedial line.

Hab. U.S.A., Eastern and Middle States, New York, 3 ♀, Georgia, Florida (*Doubleday*), 1 ♀ type *arcuata*. *Exp.* 34–44 millim.

Larva. Head black. Body uniform, narrowly striped in black and white, 15 black spines to the spiracles; subventral region reddish with two white lines; cervical shield velvety black; joints 12–13 black with rounded white patches and triangular marks, the second one with quadrangular outline. Foot-plant, *Smilax*. Larvæ are gregarious.—H. G. D.

2930. Trachea illyrica.

Noctua illyria, Frr. Neue Beitr. vi. pl. 483. f. 2 (1852); Staud. Cat. Lep. pal. p. 175.
Hadena scortea, Herr.-Schäff. Eur. Schmett., Noct. f. 582 (1852).

Head and thorax rufous mixed with black and some grey; tegulæ with black medial line; palpi blackish at sides; sides of

frons with black bars; tarsi black ringed with white; abdomen grey-brown with the dorsal crests black. Fore wing grey tinged with red-brown and irrorated with black, the medial area suffused with black, the veins blackish slightly irrorated with white; subbasal line black defined by whitish on outer side, angled outwards below costa, inwards in cell and ending at submedian fold; a strong sinuous black streak below base of cell and an oblique streak above inner margin before the antemedial line, which is double filled in with white, waved, oblique from costa to submedian fold; claviform obscurely defined by black; orbicular and reniform defined by black, the former round, the latter with white annulus and some white in centre, slightly angled inwards on median nervure; a diffused black medial line, oblique from costa to median nervure; postmedial line black defined by white on outer side, bent outwards below costa, then dentate and produced to short streaks on the veins, angled inwards above vein 6, excurved to vein 4, then strongly incurved, some white points beyond it on costa; postmedial area paler except towards costa; subterminal line pale, defined on inner side by reddish brown and with faint dentate dark marks before it at middle, angled outwards at vein 7 and somewhat dentate at veins 4, 3; a terminal series of small black lunules; cilia brown with whitish line at base. Hind wing grey suffused with brown especially on terminal area; a dark discoidal lunule; cilia ochreous white with dark line through them; the underside whitish suffused and irrorated with brown, a black discoidal lunule, sinuous postmedial line, and diffused subterminal band.

Hab. Austria, Hungary; Switzerland, Zeller and Frey Colls.; N. Italy; Scandinavia. *Exp.* 38 millim.

Larva. Kirby, Butt. & Moths Eur. p. 241; Hffm. Raup. p. 297. Yellowish grey. Food-plant, *Veronica*.

2931. Trachea pabulatricula.

Noctua pabulatricula, Brahm, Ins. Kal. ii. p. 395 (1791); Staud. Cat. Lep. pal. p. 175.
Noctua connexa, Borkh. Eur. Schmett. iv. p. 360 (1792); Dup. Lép. Fr., Suppl. iv. p. 215, pl. 68. f. 4; Steph. Ill. Brit. Ent., Haust. iii. p. 6.
Noctua elota, Hübn. Eur. Schmett., Noct. f. 462 (1818).

Head and thorax black-brown mixed with white and rufous, the pro- and metathoracic crests rufous, tegulæ with black medial line, patagia edged with black; palpi blackish at sides; frons with lateral black bars; pectus and legs grey-white; abdomen grey suffused with brown, the dorsal crests black. Fore wing rather narrow, grey-white irrorated with fuscous, the inner antemedial area and the medial area towards costa and inner margin suffused with black; subbasal line indistinct, double, angled outwards below costa and ending at submedian fold in base of which there is a sinuous black streak; a curved black streak above inner margin before the antemedial line, which is double filled in with white, angled outwards below costa, then very obliquely excurved

to near postmedial line and retracted to inner margin; claviform minute, white defined by black; orbicular white defined by black and with brown centre, oblique elliptical; reniform white defined by black on inner side only; an ill-defined diffused medial line, oblique from costa to median nervure; postmedial line indistinct from costa to vein 3, then strong, black defined by white on outer side, slightly oblique at costa, then dentate and produced to slight black and white streaks on the veins, strongly incurved below vein 5, some white points beyond it on costa; subterminal line indistinct, whitish, slightly defined by brown on inner side and with minute dentate dark marks before it at middle, angled outwards at vein 7 and somewhat dentate at veins 4, 3; a terminal series of black striæ; cilia brown and white. Hind wing greyish suffused with fuscous brown, the terminal area rather darker; cilia whitish with a dark line through them; the underside grey-white irrorated with brown, a dark discoidal spot and diffused curved postmedial and subterminal lines.

Hab. Britain, Leech Coll.; Germany, Zeller Coll., Moravia; Austria, Galicia, Hungary; S. Sweden; Russia, St. Petersburg, Zeller Coll., Sarepta, Leech Coll. *Exp.* 36–40 millim.

Larva. Meyr. Brit. Lep. p. 134; Barrett, Lep. Brit. iv. p. 398, pl. 184. f. 1; Hffm. Raup. p. 98. pl. 27. f. 23.

Yellow-brown; dorsal line yellowish edged with black: lateral lines dark grey-brown shaded with black above and below; spiracles black; ventral surface yellowish grey; head brown with two curved black stripes. Food-plants: Grasses and *Phalaris arundinacea*. 4–5.

2932. Trachea allecto. (Plate CXII. fig. 11.)

Hadena allecto, Smith, Can. Ent. xxxi. p. 260 (1899); Dyar, Cat. Lep. N. Am. p. 115.

♂. Head and thorax grey mixed with black, the thoracic crests slightly tinged with brown; frons with lateral black bars; tegulæ with strong black medial line; patagia with black streak near upper edge; tarsi black ringed with white; abdomen grey mixed with fuscous, the dorsal crests dark, the anal tuft with some ochreous hair. Fore wing grey irrorated with black; the medial area faintly tinged with brown, the postmedial area pale except towards costa, the veins streaked with black; a black streak below base of cell; subbasal line represented by two black striæ from costa; a black streak above inner margin before the antemedial line, which is double, oblique and slightly sinuous to submedian fold, then angled inwards on vein 1 and outwards above inner margin; claviform slightly defined by black and with strong black streak from it to postmedial line; orbicular and reniform grey-white defined by black, the latter on inner side only, their centres slightly tinged with brown, the former somewhat oblique elliptical; an indistinct medial line, oblique from costa to vein 2, then incurved; postmedial line double at costa, bent outwards below costa, then

dentate and produced to streaks on the veins, excurved to vein 4, then strongly incurved, some white points beyond it on costa; subterminal line whitish, defined on inner side by dentate black marks at middle and with blackish patches beyond it at discal and submedian folds, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules; cilia grey and black. Hind wing grey uniformly suffused and irrorated with fuscous; an indistinct postmedial line and fine terminal line; cilia white with a dark line through them; the underside yellowish white irrorated with fuscous, a discoidal lunule and sinuous postmedial line.

Hab. Canada, Manitoba, Winnipeg, 1 ♂, Cartwright (*Heath*), 2 ♂, 2 ♀, Alberta, Calgary (*Wolley-Dod*), 2 ♂, 1 ♀, Br. Columbia; U.S.A., Dakota. *Exp.* 38 millim.

2933. Trachea mactata. (Plate CXII. fig. 12.)

Apamea mactata, Guen. Noct. i. p. 207 (1852); Smith, Cat. Noct. N. Am. p. 145.

Head and thorax grey mixed with reddish and dark brown; sides of palpi and frons blackish; tegulæ with black line near tips; patagia with some black scales near upper edge; tarsi blackish with pale rings; abdomen grey mixed with brown. Fore wing grey slightly tinged with brown and irrorated with black, the postmedial area rather paler; a sinuous black streak below base of cell; subbasal line double filled in with whitish, from costa to submedian fold; a slight black streak above inner margin before the antemedial line, which is double filled in with whitish, oblique, waved, angled outwards below costa and above inner margin; claviform defined by black and with black streak from its extremity to postmedial line; orbicular and reniform large with brown centres and pale annuli defined by black, the former oblique elliptical; an indistinct waved medial line; postmedial line double filled in with whitish, bent outwards below costa, then minutely dentate and produced to streaks on the veins, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line pale, defined on inner side by slight dentate brown marks at middle and with dark streaks beyond it in the interspaces, angled outwards at vein 7 and waved at veins 4, 3; a terminal series of slight black lunules; cilia fuscous and grey. Hind wing greyish, nearly uniformly suffused with fuscous brown; a curved postmedial line; cilia whitish with a fuscous line near base; the underside whitish irrorated with fuscous, a dark discoidal spot, sinuous postmedial line, and diffused subterminal band.

Hab. Canada (*Norman*), 1 ♂, 2 ♀; U.S.A., Northern, Eastern, and Middle States, New York, 2 ♂, Trenton Falls (*Doubleday*), 1 ♂ type, Colorado. *Exp.* 40 millim.

2934. Trachea ferens. (Plate CXII. fig. 13.)

Xylophasia ferens, Smith, Can. Ent. xxxv. p. 134 (1903).

Head and thorax grey largely mixed with black; frons with lateral black bars; tegulæ with black medial line; tarsi black ridged with whitish; abdomen grey suffused with fuscous, the dorsal crests blackish at tips, the genital tufts ochreous. Fore wing purplish grey suffused with fuscous and thickly irrorated with black; a sinuous black streak below base of cell; subbasal line represented by double black striæ from costa; a black streak above inner margin before the antemedial line, which is indistinctly double filled in with grey, waved, oblique from costa to submedian fold; claviform defined by black, acute at extremity and with strong black streak below and beyond it to postmedial line; orbicular and reniform with slight whitish annuli defined by black, the former irregularly rounded; traces of a slightly sinuous medial line oblique from costa to below cell; postmedial line indistinctly double filled in with grey, bent outwards below costa, then minutely dentate, excurved to vein 4, then oblique, some whitish points beyond it on costa and series of black and white points on the veins; subterminal line white, defined on inner side at middle by small dentate black marks, angled outwards at vein 7 and minutely dentate at veins 4, 3; a terminal series of small black lunules; cilia blackish intersected with grey. Hind wing grey with an ochreous tinge and suffused with fuscous, the veins and terminal area darker; a black terminal line; cilia ochreous with a blackish line through them except towards tornus; the underside whitish tinged with ochreous and irrorated with brown, a small discoidal spot, sinuous postmedial line, and slight diffused subterminal band.

Hab. Canada, Manitoba, Cartwright, Alberta, Calgary (*Wolley-Dod*), 3 ♂, 1 ♀. *Exp.* 40 millim.

2935. Trachea separans. (Plate CXII. fig. 14.)

Hadena separans, Grote, Bull. U.S. Geog. Geol. Surv. Terr. vi. p. 260 (1880); Smith, Cat. Noct. N. Am. p. 133.

Head and thorax dark brown mixed with black and grey; frons with black bar; tegulæ with black medial line; patagia with some black scales near upper edge; tibiæ and tarsi black ringed with white; abdomen grey mixed with brown, the dorsal crests blackish at tips. Fore wing grey irrorated with dark brown and white scales and suffused in parts with purplish fuscous, the costal area, medial area to submedian fold, and terminal area except at apex darker; subbasal line double filled in with whitish, waved, from costa to submedian fold; a sinuous black streak below base of cell and another above inner margin before the antemedial line, which is double filled in with white, oblique, waved, bent inwards to inner margin; claviform small, incompletely defined by black and with diffused black fascia below and beyond it to postmedial line; orbicular and reniform whitish defined by black and with some

dark irroration in centres, the former more or less oblique elliptical, the latter with its lower part filled in with black; an indistinct waved medial line; postmedial line double filled in with white, bent outwards below costa, then dentate and produced to black and white points on the veins, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line white, defined on inner side by small dentate blackish marks, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of small black lunules; cilia fuscous with fine pale line at base and intersected with whitish. Hind wing ochreous whitish suffused with brown especially on terminal area, leaving a whitish mark on termen towards tornus; a slight discoidal lunule and postmedial line; a fine dark terminal line; cilia ochreous white with a dark line through them except towards tornus; the underside with the costal and terminal areas irrorated with fuscous, a black discoidal spot, and indistinct sinuous postmedial line.

Hab. U.S.A., New York, Evans Center (*Grote*), 1 ♂, 1 ♀ type, Wisconsin. *Exp.*, ♂ 42, ♀ 46 millim.

*2936. Trachea perpenoa. (Plate CXII. fig. 15.)

Hadena perpenoa, Grote, Can. Ent. xiii. p. 229 (1881); Smith, Cat. Noct. N. Am. p. 138.

♀. Head and thorax brownish grey mixed with black; frons with black spots at sides; tegulæ with strong black medial line; prothoracic crest blackish in front; abdomen grey mixed with fuscous, the dorsal crests blackish. Fore wing grey tinged with brown and fuscous; a black streak below the cell extending to antemedial line; subbasal line represented by two oblique black striæ from costa; antemedial line double at costa, then oblique to postmedial line above vein 1, then represented by a long streak above inner margin with a short oblique streak before it; orbicular a very elongate oblique V-shaped mark defined by black, its lower extremity connected with the reniform, which is defined by black on inner side and below, open above and on median nervure, where it is angled inwards, with slight whitish lunule on outer side; postmedial line defined by whitish on outer side, bent outwards below costa, then dentate and produced to short black streaks on the veins, oblique below vein 4, some whitish points beyond it on costa; subterminal line diffused, whitish, excurved above and below middle and incurved at discal and submedian folds, the interspaces beyond it with black streaks, stronger above and below veins 5 and 2, ending in small terminal lunules. Hind wing whitish tinged with brown, the terminal area suffused with brown; cilia white, tipped with brown from apex to vein 2; the underside whitish, the costal and terminal areas irrorated with brown, a discoidal lunule and sinuous postmedial line.

Hab. U.S.A., New Mexico, Arizona, in Coll. Schaus. *Exp.* 36 millim.

2937. Trachea fraudulenta.

Hadena fraudulenta, Staud. Stett. ent. Zeit. 1888, p. 252; id. Rom. Mém. vi. p. 445, pl. 8. f. 5; id. Cat. Lep. pal. p. 175.

♂. Head and thorax grey-brown, the outer edge of patagia and extremity of metathorax black; palpi blackish at sides; frons with lateral black bars; tarsi black ringed with white; abdomen grey-brown, the dorsal crests black. Fore wing narrow, grey-brown with a faint reddish tinge; subbasal line represented by double black striæ from costa; a strong black streak below base of cell and an oblique streak above inner margin before the antemedial line, which is indistinctly double, waved from costa to median nervure, then strongly excurved and retracted to inner margin; claviform minute, defined by black and with black streak from it to postmedial line; orbicular defined by black, very oblique elliptical; reniform defined by black on inner side only; traces of a waved medial line, oblique from costa to median nervure; postmedial line indistinctly double towards costa, below vein 3 strong, black slightly defined by white on outer side, bent outwards below costa, then minutely waved and excurved to vein 4, then strongly incurved, some white points beyond it on costa; subterminal line very indistinct, brownish, angled ontwards at vein 7 and somewhat dentate at middle; a somewhat lunulate black terminal line; cilia fuscous with fine yellowish line at base. Hind wing ochreous uniformly suffused with brown, the cilia rather paler; the underside grey-white irrorated with brown, a small discoidal spot and indistinct curved portmedial and subterminal lines.

Hab. E. Siberia, Amurland, Radefka, 1 ♂. *Exp.* 30 millim.

2938. Trachea conciliata.

Apamea conciliata, Butl. A. M. N. H. (5) i. p. 84 (1878); id. Ill. Het. B. M. ii. p. 24, pl. 29. f. 3.
Apamea gemina, Leech, Trans. Ent. Soc. 1900, p. 59 (nec Hübn.).

Head and thorax grey-brown with a rufous tinge and slightly mixed with olive, the metathorax with some dark scales; tarsi fuscous ringed with whitish; abdomen grey-brown tinged with rufous. Fore wing grey-brown with a faint olive tinge and irrorated with fuscous, some pale rufous below base of cell and beyond the reniform; traces of a slight black streak below base of cell; subbasal line represented by double black striæ from costa; antemedial line double filled in with greyish, irregularly waved, somewhat oblique and bent inwards to inner margin; claviform defined by black and with black streak below it to postmedial line; orbicular and reniform pale defined by black, the former round, the latter undefined above and on outer side, a slight black streak between their upper parts; traces of a waved medial line; postmedial line defined by grey on outer side, bent outwards below costa, then dentate and excurved to vein 4, then oblique and nearly

straight to inner margin, some white points beyond it on costa; subterminal line indistinct, whitish, defined on inner side by slight dentate dark marks, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules; cilia greyish with a slight dark line through them. Hind wing pale suffused with reddish brown, the terminal area darker; an indistinct postmedial line; cilia yellowish white with a dark line through them except towards tornus; the underside brownish white, the costal area tinged with rufous, the terminal area suffused with fuscous, a dark discoidal spot and curved postmedial line.

Ab. 1. ♀ (type). Thorax with white scales mixed; fore wing with some white on and before antemedial line on inner area, a whitish patch beyond postmedial line from vein 3 to inner margin.

Hab. Japan, Yokohama (*Jonas*, *Pryer*), 3 ♂, 7 ♀, type. *Exp.* 40–42 millim.

2939. Trachea commixta. (Plate CXII. fig. 16.)

Xylophasia commixta, Butl. Trans. Ent. Soc. 1881, p. 174.
Xylophasia tychoona, Leech, P. Z. S. 1889, p. 488, pl. 51. f. 3.

Head and thorax black-brown mixed with grey, palpi black except at tips; frons with lateral black bars; tegulæ rufous at base and with black medial line; pectus and legs pale brown, the tarsi fuscous with pale rings; abdomen fuscous brown, ventrally pale brown. Fore wing brown suffused with purplish fuscous and with slight dark irroration, some rufous at base of costa, on inner margin near base and on medial area from costa to submedian fold; a sinuous black streak below base of cell; subbasal line represented by double black striæ from costa; antemedial line double filled in with rufous, angled inwards in cell, then excurved and waved; claviform small, defined by black and with black streak from it to postmedial line; orbicular and reniform with rufous centres and pale annuli, the former more or less oblique or elongate elliptical and defined by black on outer side, the latter on inner side; traces of a waved medial line oblique from costa to below cell; postmedial line defined by rufous on outer side, bent outwards below costa, then minutely dentate, excurved to vein 4, then strongly incurved, some pale points beyond it on costa; subterminal line rufous, defined on inner side above and below vein 5 by black streaks extending to postmedial line, then by minute dentate black marks, angled outwards at vein 7 and minutely dentate at veins 4, 3; a terminal series of small black lunules; cilia with a fine pale line at base. Hind wing greyish tinged with brown or fuscous, the terminal area broadly fuscous; cilia whitish with a dark line through them; the underside white slightly tinged with brown, a black discoidal spot, and curved postmedial line with broad fuscous band beyond it.

Hab. Japan, Yokohama (*Jonas*, *Maries*, *Pryer*), 3 ♂, 4 ♀, type and type *tychoona*. *Exp.* 32–44 millim.

2940. Trachea indocilis. (Plate CXII. fig. 17.)

Xylophasia indocilis, Wlk. ix. 178 (1856); Smith, Cat. Noct. N. Am. p. 132.

Head and thorax grey tinged with rufous and mixed with black, palpi blackish at sides; frons with lateral black bars; tegulæ with strong medial black line; patagia black edged with greyish above; tibiæ and tarsi blackish ringed with pale reddish; abdomen pale grey-brown, the ventral surface tinged with purplish pink and irrorated with black. Fore wing brownish grey tinged with purplish red, the medial area suffused with purplish from below costa to submedian fold; a sinuous black streak below base of cell; subbasal line indistinctly double, waved, from costa to submedian fold; a diffused black streak above inner margin before the antemedial line, which is indistinctly double, angled inwards in cell, then excurved and angled inwards on vein 1 and to inner margin; claviform small or moderate, defined by black, acute at extremity and with strong black streak below it to postmedial line, towards which it is diffused above; orbicular and reniform pale with slight whitish annuli defined by black, the former somewhat oblique elliptical; an indistinct waved medial line oblique from costa to vein 2; postmedial line indistinct, with double black spots at costa, slightly bent outwards below costa, then dentate and produced to black and white points on the veins, slightly incurved at discal fold and strongly below vein 4, some white points beyond it on costa; subterminal line whitish, slightly defined by brown on inner side, excurved below vein 7 and dentate to near termen at veins 4, 3, with black patches beyond it at discal and submedian folds; a terminal series of small black lunules; cilia chequered blackish and grey. Hind wing brownish grey suffused with fuscous, the terminal area darker; a discoidal lunule and curved postmedial line; some grey on termen between veins 5 and 1; a dark terminal line; cilia ochreous white with series of dark points except towards tornus; the underside brownish white irrorated with fuscous, a dark discoidal point, sinuous postmedial line, and diffused subterminal band.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), 3 ♂; U.S.A., Eastern and Middle States, New York (*Packard*), 1 ♀, Trenton Falls (*Doubleday*), 1 ♂, 4 ♀ type, Evans Center (*Grote*), 1 ♂, 2 ♀. *Exp.* 40–42 millim.

2941. Trachea obscura.

Noctua obscura, Haw. Lep. Brit. p. 189 (1809); Steph. Ill. Brit. Ent., Haust. ii. p. 184.

Noctua gemina, Hübn. Eur. Schmett., Noct. f. 482 (1818); Frr. Neue Beitr. i. p. 50, pl. 28; Staud. Cat. Lep. pal. p. 175.

Noctua remissa, Treit. Schmett. Eur. v. 1, p. 346 (1825); Hübn. Eur. Schmett., Noct. f. 423; Frr. Neue Beitr. i. p. 52, pl. 29; Steph. Ill. Brit. Ent., Haust. ii. p. 181.

Noctua submissa, Treit. Schmett. Eur. v. 1, p. 346 (1825).
Noctua anceps, Dup. Lép. Fr. vii. p. 109, pl. 107. f. 5 (1827).

Head and thorax red-brown mixed with grey; frons with black lateral bars; tegulæ with black medial line; patagia with reddish upper edge; pectus greyer; tarsi fuscous with pale rings; abdomen brown, the base paler, the dorsal crests dark at tips, the ventral surface tinged with red. Fore wing grey irrorated and partly suffused with reddish brown; subbasal line double filled in with grey, waved, from costa to submedian fold; a slight black streak below base of cell and another above inner margin before the antemedial line, which is double filled in with grey, waved, oblique from costa to submedian fold, slightly angled inwards on vein 1 and bent inwards to inner margin; claviform moderate, defined by black; orbicular and reniform with slight grey annuli defined by black, the former oblique elliptical, the latter with grey centre defined by brown; a medial line oblique from costa to vein 2, then dentate, slightly angled outwards below costa; postmedial line double filled in with grey, bent outwards below costa, then minutely waved and produced to black and white points on the veins, incurved below vein 5, some white points beyond it on costa; subterminal line whitish, slightly defined on inner side by brown and with minute dentate brown marks before it at middle, excurved below vein 7 and dentate to near termen at veins 4, 3; a terminal series of small black lunules; cilia reddish brown with dark lines at middle and tips. Hind wing pale tinged with yellowish brown, the veins and terminal area darker; a faint discoidal lunule and postmedial line; cilia yellowish white with dark line near base except towards tornus; the underside yellowish white, the costal area tinged with reddish and irrorated with brown, a discoidal lunule, sinuous postmedial line with minute dark streaks on the veins, and diffused subterminal band.

Ab. 1. *submissa*. Fore wing with the inner and postmedial areas rather paler, the streaks on basal area and dentate marks before subterminal line stronger, a dark streak from below claviform to postmedial line.

Ab. 2. *remissa*. Fore wing with the inner and postmedial areas whitish, the streaks and dentate marks strong, the orbicular and reniform whitish.

Hab. Britain, Scotland, Leech Coll., England, Leech Coll.; France; Germany, Zeller and Leech Colls.; Austria: Hungary; Switzerland, Frey Coll.; N. Italy; Dalmatia, Leech Coll.; Sweden; Russia, Livonia, Zeller Coll., St. Petersburg, Zeller Coll.; Armenia; W. Siberia, Altai, Leech Coll.; E. Siberia, Ussuri. *Exp.* 40–42 millim.

Larva. Meyr. Brit. Lep. p. 130; Barrett, Lep. Brit. iv. p. 386, pl. 182.

Grey-brown with darker striation; dorsal line yellowish white, dark-edged; subdorsal line brownish ochreous; spiracular line broad, pale greyish ochreous; head brownish grey, with darker freckles; thoracic plate black with whitish lines. Food-plants, Grasses. 9–4.

2942. Trachea tusa. (Plate CXII. fig. 18.)

Hadena tusa, Grote, Bull. Geog. Geol. Surv. Terr. iv. p. 177 (1878); Smith, Cat. Noct. N. Am. p. 143.

Head and thorax reddish brown mixed with fuscous and some grey; frons with black bar; tegulæ with strong medial black line; pectus clothed with purplish-red hair; tarsi black ringed with reddish; abdomen grey mixed with fuscous, the dorsal crests darker, the ventral surface tinged with purplish. Fore wing purplish brown and greyish, the basal area suffused with olive-brown to antemedial line at costa, then obliquely to postmedial line, at submedian fold, the terminal area dark except at apex; subbasal line indistinctly double, waved, from costa to vein 1; a slight black streak above inner margin before the antemedial line, which is indistinctly double, curved, slightly waved; claviform indistinctly defined by black and with slight black streak from its extremity to postmedial line; orbicular reddish grey defined by black at sides only, oblique; reniform rather irregular, with grey and brown centre defined by brown and slight pale annulus defined by blackish, some blackish in lower part; traces of a medial line oblique from costa to below cell, then incurved; postmedial line indistinctly double, slightly bent outwards below costa, then minutely waved, excurved to vein 4, then incurved; subterminal line pale defined by fuscous on inner side, angled outwards at vein 7, excurved at middle, then incurved and crossed by a triangular black shade from termen; a terminal series of small black lunules; cilia with fine pale line at base. Hind wing greyish tinged with ochreous and brown, the terminal area darker; cilia whitish with a brown line near base; the underside whitish, the costal and terminal areas irrorated with brown, a dark discoidal spot.

Hab. U.S.A., California, 1 ♂, 1 ♀ type. *Exp.* 34 millim.

2943. Trachea divesta. (Plate CXII. fig. 19.)

Hadena divesta, Grote, Can. Ent. vi. p. 215 (1874); Smith, Cat. Noct. N. Am. p. 143.

♂. Head and thorax grey mixed with rufous; frons with lateral black bars; tegulæ with black medial line; patagia with some black scales near upper edge; pectus and legs ochreous and whitish, the tarsi black with pale rings; abdomen ochreous with the dorsal crests black. Fore wing ochreous suffused with rufous especially on inner medial area and slightly irrorated with fuscous; a curved black streak below base of cell; subbasal line represented by a black striga from costa; antemedial line defined by whitish on inner side, oblique, waved, from costa to submedian fold, then angled inwards on vein 1; claviform short and broad, rufous defined by black and with strong black streak from its extremity to postmedial line; orbicular and reniform pale ochreous incompletely

defined by black, the former round, the latter large, rounded; postmedial line defined by whitish on outer side and by a prominent white lunule in submedian interspace, bent outwards below costa, then minutely dentate, excurved to vein 4, then oblique and approximated to subterminal line, some pale points beyond it on costa; subterminal line indistinct, whitish, defined on inner side by small dentate black marks at middle and with some fuscous beyond it at discal and submedian folds, angled outwards at vein 7 and somewhat dentate at veins 4, 3; a terminal series of small black lunules and waved terminal line; cilia chequered brown and whitish. Hind wing pale ochreous, the veins and terminal area tinged with brown; a dark terminal line; cilia whitish with a brown line through them; the underside whitish irrorated with brown, a dark discoidal lunule and curved postmedial line.

♀. Greyer; fore wing with hardly any rufous except patches beyond the basal streak and claviform.

Hab. Canada, Vancouver I., 1 ♂ type; U.S.A., Washington, 1 ♂, Colorado, California, Sauzalito, 1 ♀. *Exp.* 38 millim.

2944. Trachea cerivana. (Plate CXII. fig. 20.)

Hadena cerivana, Smith, Can. Ent. xxxii. p. 220 (1900); Dyar, Cat. Lep. N. Am. p. 116.

Head and thorax grey mixed with brown; palpi blackish at sides; frons with lateral black bars; patagia with some black scales near upper edge; tarsi black ringed with whitish; abdomen grey tinged with brown, the dorsal crests black at tips. Fore wing grey, the outer part of medial area and the postmedial costal area slightly tinged with rufous; a sinuous black streak below base of cell; subbasal line waved, from costa to submedian fold; antemedial line minutely waved, excurved below cell, black defined by whitish on inner side; claviform small or minute, defined by black; orbicular and reniform with white annuli defined by black, the former rather oblique elliptical, the latter with its lower part filled in with blackish; a brown medial line oblique from costa to median nervure, then minutely waved; postmedial line black defined by whitish on outer side, slightly bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line pale, slightly defined by red-brown on inner side, angled outwards at vein 7, excurved and minutely dentate at middle; a terminal series of small black lunules; cilia red-brown with a fine white line at base. Hind wing grey tinged with fuscous, the veins and terminal area suffused with fuscous; a dark terminal line; cilia white with a brown line through them; the underside white slightly irrorated with fuscous, a discoidal lunule, postmedial series of slight streaks on the veins, and traces of diffused subterminal band.

Hab. Canada, Manitoba, Aweme (*Criddle*), 1 ♂, 1 ♀, Alberta, Calgary (*Wolley-Dod*), 2 ♂, 3 ♀. *Exp.* 38–40 millim.

2945. Trachea finitima. (Plate CXII. fig. 21.)

Apamea finitima, Guen. Noct. i. p. 206 (1852); Smith, Cat. Noct. N. Am. p. 134.

Head and thorax pale rufous mixed with grey and a few black scales; palpi blackish at sides; frons with lateral black bars; patagia with some black scales near upper edge; tarsi blackish ringed with white; abdomen grey tinged with brown, the dorsal crests blackish. Fore wing grey slightly tinged with rufous, the medial area strongly suffused with rufous; a strong sinuous black streak below base of cell; subbasal line indistinctly double, waved, from costa to submedian fold; antemedial line indistinctly double, waved, excurved below the cell; claviform short, defined by black; orbicular and reniform large with whitish annuli defined by black, the former rather oblique elliptical, the latter sometimes slightly angled inwards on median nervure; an indistinct medial line, oblique from costa to median nervure, then waved and incurved; postmedial line indistinctly double filled in with grey, slightly bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line pale slightly defined by brown on inner side, excurved below vein 7, excurved and minutely waved at middle; a terminal series of small black lunules. Hind wing grey tinged with brown, the veins and terminal area suffused with fuscous; a terminal series of black striæ; cilia ochreous white with a dark line through them; the underside ochreous grey, the costal area irrorated with brown, a slight discoidal lunule, curved postmedial line, and traces of diffused subterminal band.

Hab. Canada, Ottawa (*Fletcher*), 1 ♂, 1 ♀; U.S.A., Northern, Middle, and Eastern States, Massachusetts, Beverly (*Packard*, *Burg*), 2 ♂, 3 ♀, New York, Schenectady (*Lintner*), 1 ♂, 3 ♀, Oregon (*Walsingham*), 1 ♀, Colorado. *Exp.* 40–48 millim.

2946. Trachea basilinea.

Noctua basilinea, Schiff. Wien. Verz. p. 78 (1776); Fabr. Mant. Ins. ii. p. 183 (1787); Esp. Schmett. iv. pl. 166. f. 1; Hübn. Eur. Schmett., Noct. f. 427; Dup. Lép. Fr. vii. p. 15, pl. 101. f. 4; Frr. Beitr. pl. 29; Steph. Ill. Brit. Ent., Haust. iii. p. 5; Dyar, Cat. Lep. N. Am. p. 116; Staud. Cat. Lep. pal. p. 174.
Noctua nebulosa, View. Schmett. ii. p. 55, pl. 1. f. 6 (1789).
Hadena cinifacta, Græs. Berl. ent. Zeit. 1888, p. 334 (nec Grote).
Hadena grisescens, Staud. Stett. ent. Zeit. 1889, p. 42.
Hadena basistriga, Staud. Rom. Mém. vi. p. 439 (1892).

♂. Head and thorax rufous to grey-brown; palpi blackish at sides; frons with lateral black bars; tarsi blackish with pale rings; abdomen grey suffused with brown or rufous, the dorsal crests blackish at tips. Fore wing rufous to grey-brown tinged with rufous; the median area sometimes slightly darker; a sinuous black streak below base of cell; subbasal line minutely waved, from costa to submedian fold; antemedial line black defined by whitish on

inner side, waved, excurved below cell; claviform small or minute, slightly defined by blackish; orbicular and reniform large, with whitish annuli defined by blackish, the former round or somewhat oblique elliptical, the latter sometimes angled inwards on median nervure; an indistinct waved medial line oblique from costa to median nervure, then incurved; postmedial line indistinctly double filled in with whitish, slightly bent outwards below costa, then minutely waved and produced to black and white points on the veins, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line pale, slightly defined by brown on inner side, excurved below vein 7, excurved and waved at middle; a terminal series of small black lunules; cilia with a fine pale line at base. Hind wing ochreous whitish suffused with brown, the veins and terminal area darker; a dark terminal line; cilia ochreous white with a brownish line through them; the underside whitish irrorated with brown, a black discoidal spot, sinuous postmedial line, and indistinct diffused irregular subterminal band.

Ab. 1. *basistriga*. Fore wing suffused with blue-grey except medial area.—Norway, W. Turkestan, E. Siberia, Japan, W. China.

Ab. 2. *grisescens*. Much paler and greyer.—W. & E. Turkestan, Tibet.

Hab. Britain, Scotland, Leech Coll., England, Leech Coll.; France, Sand Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland; N. Italy; Dalmatia; Norway; Russia, St. Petersburg, Zeller Coll.; Armenia; W. Turkestan, Fergana, Issyk Kul, Tarbagatai Mts.; W. Siberia, Altai; E. Turkestan, Kashgar, Korla; Tibet, Amdo; E. Siberia, Ussuri; Japan, Hakodaté (*Andrews*), 1 ♂, Yokohama (*Pryer*), 2 ♂, 2 ♂; W. China, Chia-kou-ho (*Pratt*), 1 ♀. *Exp* 40–42 millim.

Larva. Meyr. Brit. Lep. p. 133; Barrett, Lep. Brit. iv. p. 382, pl. 181. f. 2.

Pale brown; dorsal line whitish ochreous; subdorsal line indistinctly pale; spiracular line pale or whitish, dark-edged above; head and thoracic plate dark brown with whitish streaks. Food-plants: Grains of Wheat, Grasses, *Taraxacum*, &c. 8–3.

2947. Trachea unanimis.

Noctua unanimis, Hübn. Eur. Schmett., Noct. f. 556 (1818); Treit. Schmett. Eur. x. ii. p. 62 (1835); Frr. Neue Beitr. iv. pl. 371; Steph. Ill. Brit. Ent., Haust. iii. p. 9; Herr.-Schäff. Eur. Schmett., Noct. f. 581; Staud. Cat. Lep. pal. p. 175.
Hadena scortea, Herr.-Schäff. Eur. Schmett., Noct. f. 583 (1852), nec 582.

Head and thorax rufous mixed with dark brown and grey; tegulæ with blackish medial line and dark tips; patagia with black line near upper edge; tarsi blackish with pale rings; abdomen brown, greyish at base, and with the dorsal crests black. Fore wing reddish brown irrorated with black and more or less suffused with fuscous, the veins usually irrorated with white; subbasal line double, waved, from costa to submedian fold; a slight black streak below base of cell, another slight oblique streak above inner margin before the

antemedial line, which is double filled in with grey, angled outwards before costa, oblique to submedian fold, then waved; claviform diffusedly defined by black and sometimes filled in with black; orbicular and reniform defined by black, the former with slight pale annulus, oblique elliptical and somewhat irregular, the latter with white annulus on outer edge, some white in centre and slightly angled inwards on median nervure; a slight diffused medial shade, oblique from costa to median nervure; postmedial line dark defined by greyish on outer side, double at costa, bent outwards below costa, then with black and white points beyond it on the veins, angled inwards above vein 6, excurved to vein 4, then strongly incurved to below end of cell, some white points beyond it on costa; subterminal line pale, slightly defined on inner side by brown and with small dentate black marks before it at middle, angled outwards at vein 7 and dentate at veins 4, 3, the area beyond it rather darker; a terminal series of small black lunules; cilia fuscous intersected with greyish. Hind wing greyish tinged with brown, the veins and terminal area suffused with fuscous brown; a dark discoidal spot; cilia ochreous with a dark line through them; the underside ochreous white irrorated with brown, a dark discoidal spot, curved postmedial line with slight dark streaks on the veins, and diffused subterminal band.

Hab. Britain, Leech Coll.; France; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland; Spain, Aragon; N. Italy; S. Sweden; Russia, Livonia, Urals; E. Siberia, Amurland. *Exp.* 32–38 millim.

Larva. Meyr. Brit. Lep. p. 135; Barrett, Lep. Brit. iv. p. 389, pl. 184. f. 2.

Pale brown tinged with ochreous or greenish; dorsal line ochreous white, dark-edged; subdorsal line pale, dark-edged; spiracular line broad, pale ochreous, dark-edged above; head and thoracic plate brown. Food-plants, Grasses. 8–3.

2948. Trachea fumosa. (Plate CXII. fig. 22.)

Hadena fumosa. Grote, Bull. Geog. Geol. Surv. Terr. v. p. 205 (1879); Smith, Cat. Noct. N. Am. p. 143.

Head, thorax, and abdomen pale fuscous brown mixed with grey; tegulæ with slight dark medial line; tarsi blackish ringed with white; abdomen with the dorsal crests blackish. Fore wing fuscous brown irrorated with grey; subbasal line double, waved, from costa to submedian fold; antemedial line double, waved, somewhat oblique; claviform large, defined by black; orbicular and reniform defined by black, the former round, the latter rather constricted at middle; postmedial line defined by grey on outer side, bent outwards below costa, then minutely waved, oblique below vein 4, some pale points beyond it on costa; subterminal line pale, with faint dark marks before it and streaks beyond it, angled outwards at vein 7 and excurved at middle; a pale punctiform line at base of cilia. Hind wing pale nearly uniformly suffused with fuscous brown; cilia

whitish with a diffused brown line through them; the underside whitish irrorated with brown, a discoidal lunule and waved postmedial line.

Hab. U.S.A., Colorado, 2 ♀ type. *Exp.* 40 millim.

2949. Trachea fumeola, n. sp. (Plate CXII. fig. 23.)

♂. Head and thorax grey mixed with fuscous; palpi blackish at sides; tarsi blackish ringed with white; abdomen grey suffused with brown and irrorated with fuscous. Fore wing grey suffused with brown and irrorated with fuscous, the submedian interspace tinged with flesh-colour to postmedial line, a tinge of flesh-colour before and beyond the reniform; subbasal line double, blackish, curved, from costa to vein 1; antemedial line indistinct, double, oblique, waved; claviform rather large and broad, defined by black; orbicular and reniform large, rather incompletely defined by black, the former irregularly rounded, the latter constricted at middle and extending to well below the cell; postmedial line indistinct, double at costa, bent outwards below costa, then dentate and produced to a series of black points on the veins, incurved at discal fold and below vein 4, some white points beyond it on costa; subterminal line formed of diffused whitish scales defined on inner side by fuscous suffusion and slight blackish marks, angled outwards at veins 7, 6, 4, 3, and incurved at discal fold and below vein 3; a fine waved black terminal line with black points in the interspaces; cilia with a fine whitish line at base followed by a dark line. Hind wing grey suffused with brown and the terminal area with fuscous; cilia whitish tinged with ochreous at base and with diffused fuscous medial line; the underside grey-white irrorated with brown, a slight discoidal spot and sinuous postmedial line.

♀. Head and thorax darker, the tegulæ with black medial line; fore wing darker with more fuscous brown and less grey; hind wing dark fuscous brown with a greyish tinge, the underside with distinct black discoidal spot.

Hab. U.S.A., California (*Walsingham*), 1 ♀, Gilroy Hot Springs, 2 ♀, Arizona, Pinal Mts. (*Kunzé*), 1 ♂ type. *Exp.* 36–40 millim.

2950. Trachea binotata. (Plate CXII. fig. 24.)

Mamestra binotata, Wlk. xxxii. 663 (1865); Smith, Cat. Noct. N. Am. p. 142.
Hadena extersa, Wlk. xxxiii. 728 (1865).
Hadena curvata, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 157 (1874).

Head, thorax, and abdomen fuscous black mixed with grey; tegulæ with blackish medial line; patagia with some black scales near upper edge; tarsi with pale rings. Fore wing grey tinged with purplish brown and almost entirely suffused with fuscous black; a slight sinuous black streak below base of cell; subbasal line represented by double striæ from costa and cell filled in with grey; antemedial line double filled in with grey and with some blackish

suffusion before it, slightly waved and somewhat oblique from costa to submedian fold, then excurved and retracted to inner margin; claviform slightly defined by black above and at extremity: orbicular and reniform with slight grey annuli defined by black, the former rather oblique elliptical and open above, the latter open above, constricted at middle and expanding below to well below cell, a prominent pale lunule beyond it extending to just beyond postmedial line, which is defined by grey on outer side, bent outwards below costa, incurved at discal fold, angled outwards at vein 4, then oblique, minutely waved, some pale points beyond it on costa; subterminal line whitish, excurved below vein 7 and at middle, crossed by black streaks from postmedial line above and below vein 5 and with black streak beyond it above vein 6; a terminal series of slight black lunules; cilia with a fine pale line at base. Hind wing greyish nearly uniformly suffused with fuscous, an indistinct dark discoidal spot and curved postmedial line: cilia whitish with a dark line through them; the underside whitish irrorated with fuscous, a discoidal spot and curved postmedial line.

Hab. Canada, Br. Columbia, Kaslo (*Cockle*), 2 ♂, 1 ♀, Fraser R. (*St. John*), 1 ♂, 2 ♀, Victoria (*Hanham*), 1 ♂, 1 ♀, Vancouver I. (*Lyall, J. J. Walton*), type and type *extersa*, Wellington (*Taylor*), 1 ♂; U.S.A., Washington, 1 ♂, California, Mendocino, 1 ♂, 2 ♀, type *curvata*. *Exp.* 40 millim.

Larva. Head small, brownish. Body green, a straight yellowish-white dorsal line, narrow subdorsal one and narrow stigmatal one, the latter red-edged above on joint 12. Food-plant, *Ribes*.—H. G. D.

2951. Trachea adnixa. (Plate CXII. fig. 25.)

Hadena adnixa, Grote, Can. Ent. xii. p. 243 (1880); Smith, Cat. Noct. N. Am. p. 142.

Head and thorax grey mixed with red-brown and black; frons with lateral black bars; tegulæ with blackish medial line; patagia with blackish line near upper edge; tarsi black ringed with white; abdomen grey suffused and irrorated with fuscous. Fore wing grey irrorated with fuscous and suffused in parts with red-brown and purplish pink, especially on ante- and postmedial areas; a sinuous black streak below the cell extending to antemedial line; subbasal line represented by double black striæ from costa and cell filled in with grey; antemedial line defined by grey on inner side, minutely waved from costa to submedian fold, then excurved; claviform slightly defined by black, acute at extremity; orbicular and reniform with fuscous centres and grey annuli defined by black, the former round, the latter rather constricted at middle and expanding below; a curved brown medial line; a pale patch beyond the reniform extending to the postmedial line, which is defined by grey on outer side, bent outwards below costa, then minutely waved, angled outwards below costa, then oblique, some pale points beyond it on costa and a blackish mark below vein 2; subterminal line pale, angled outwards at vein 7 and dentate at veins 4, 3, crossed by

black streaks above and below vein 5 and with slight black streak beyond it below vein 2; a terminal series of slight black lunules; cilia with fine pale line at base. Hind wing greyish nearly uniformly suffused with fuscous brown; an indistinct discoidal lunule and curved postmedial line; cilia whitish with a dark line through them; the underside grey-white irrorated with brown, a black discoidal lunule and minutely waved postmedial line.

Hab. U.S.A., Washington, 1 ♀, Nevada, 1 ♂, 2 ♀ type, California, Lake Co. (*Walsingham*), 5 ♂, 3 ♀. *Exp.* 40–44 millim.

2952. Trachea paviæ. (Plate CXII. fig. 26.)

Tæniocampa paviæ, Behr, Streck. Lep. Rhop. & Het. p. 94 (1874); Smith, Cat. Noct. N. Am. p. 142.
Hadena inconspicua, Smith, Cat. Noct. N. Am. p. 142 (1893), non descr.

♀. Head and thorax reddish brown mixed with greyish and fuscous; tegulæ with blackish line near tips; patagia with black line near upper edge; tarsi blackish with pale rings; abdomen greyish tinged with rufous and irrorated and suffused with fuscous. Fore wing greyish tinged with rufous, irrorated and in parts suffused with fuscous; a sinuous black streak below base of cell; subbasal line represented by a black striga from costa; antemedial line double filled in with greyish, minutely waved from costa to median nervure, then excurved and strongly retracted to inner margin towards which it is defined by blackish on inner side; claviform slightly defined by black above and at extremity; orbicular and reniform slightly defined by black, the former open above and below, the latter open and narrowing above and extending to below angle of cell, a pale patch beyond it; medial line absent; postmedial line double filled in with greyish, bent outwards below costa, then minutely waved, angled outwards at veins 6 and 4, then incurved, some pale points beyond it on costa; subterminal line indistinct, pale, with slight black marks before and beyond it above and below vein 5, excurved below vein 7 and at middle; a terminal series of black points; cilia with pale punctiform line at base. Hind wing fuscous brown, slightly paler at base; cilia ochreous with a dark line through them; the underside pale irrorated with brown and slightly tinged with purplish red, a black discoidal spot and curved postmedial line.

Hab. U.S.A., California (*Behr*), 1 ♀. *Exp.* 38 millim.

2953. Trachea indirecta. (Plate CXII. fig. 27.)

Hadena indirecta, Grote, Can. Ent. vii. p. 28 (1875); Smith, Cat. Noct. N. Am. p. 143.

Head and thorax purplish rufous mixed with some grey and fuscous; palpi blackish at sides; frons with black bar; tegulæ with black line near tips; patagia with black scales near upper edge; tarsi fuscous with pale rings; abdomen pale rufous, with the crests tipped with fuscous and the anal tuft tinged with rufous. Fore wing pale rufous suffused with purplish red, especially on medial

area, and slightly irrorated with fuscous; subbasal line double, waved, filled in with grey, from costa to submedian fold; a blackish streak above inner margin before the antemedial line, which is defined by white on inner side, oblique and minutely waved from costa to vein 1, below which it is excurved, then retracted to inner margin, a fine white streak on vein 1 from it to postmedial line; claviform defined by black, acute at extremity and with diffused black fascia from it to postmedial line; orbicular and reniform with slight pale annuli defined by black, the former oblique elliptical, irregular, the latter slightly defined on outer side; traces of a waved medial line, oblique from costa to median nervure; postmedial line defined by whitish on outer side, double at costa, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line whitish, slightly defined by rufous on inner side and with wedge-shaped black mark before it in submedian fold, angled outwards at vein 7 and excurved at middle, the area beyond it suffused with black except at apex; a terminal series of slight black lunules; cilia chequered pale rufous and fuscous. Hind wing ochreous greyish, irrorated and the terminal area suffused with fuscous brown; a slight discoidal spot and indistinct curved postmedial line; an ochreous bar on termen towards tornus; cilia ochreous with a fuscous line through them; the underside ochreous whitish slightly irrorated with brown, a discoidal point and curved postmedial line.

Hab. Canada, Br. Columbia, Revelstoke (*Mrs. Nicholl*), 2 ♀, Victoria (*Anderson*, *Hanham*), 3 ♂, Vancouver I. (*J. J. Walker*), 2 ♂ type, Wellington (*Taylor*), 2 ♀; U.S.A., Washington, 4 ♂, 1 ♀, Oregon, 1 ♀. *Exp.* 32–36 millim.

2954. Trachea catalina. (Plate CXII. fig. 28.)

Hadena catalina, Smith, Can. Ent. xxxi. p. 261 (1899); Dyar, Cat. Lep. N. Am. p. 115.

♂. Head, thorax, and abdomen ochreous white, tinged with flesh-colour and slightly mixed with fuscous; frons with lateral black bars; antennæ ringed black and white; patagia with some black scales near upper edge; tarsi blackish ringed with white. Fore wing ochreous white tinged with flesh-colour and irrorated with fuscous, the medial area rather paler; a few black scales in base of submedian fold; subbasal line represented by fuscous striæ from costa and cell; antemedial line defined by whitish on inner side, oblique, waved; claviform defined by a few black scales; orbicular and reniform with fuscous centres and pale annuli slightly defined by blackish, the former round; a curved medial line almost obsolete except towards costa; postmedial line defined by whitish on outer side, bent outwards below costa, then dentate and with black points at the veins, excurved to vein 4, then oblique, some pale points beyond it on costa; subterminal line whitish, excurved below vein 7 and waved at veins 4, 3; a terminal series of minute black

points; cilia chequered whitish and fuscous. Hind wing whitish suffused with fuscous brown especially on terminal area; a slight discoidal spot and indistinct curved postmedial line; cilia yellowish white with a diffused fuscous line through them; the underside whitish, the costal and terminal areas irrorated with brown, a dark discoidal lunule and sinuous postmedial line with minute dark streaks on the veins.

Hab. U.S.A., California, Walters Station, 1 ♂, Arizona. *Exp.* 32 millim.

2955. Trachea characta. (Plate CXII. fig. 29.)

Hadena characta, Grote, Can. Ent. xii. p. 243 (1880); Smith, Cat. Noct. N. Am. p. 143.

♀. Head and thorax white mixed with fuscous; frons with lateral black bars; tegulæ with slight blackish medial line; patagia with some black scales near upper edge; tarsi blackish ringed with white; abdomen grey-white irrorated with brown, the dorsal crests blackish at tips. Fore wing grey-white thickly irrorated with black, the base and medial area tinged with ochreous brown, the ante- and postmedial areas whiter, the terminal area darker except at apex; a black streak below base of cell; subbasal line represented by a slight dark striga from costa; antemedial line defined by white on inner side, angled inwards on vein 1, then outwards above inner margin; claviform strongly defined by black, acute at extremity and extending to postmedial line; orbicular and reniform white defined by black and with some fuscous in centres, the former narrow, oblique elliptical, the latter constricted at middle; postmedial line defined by white on outer side, bent outwards below costa, then minutely dentate and produced to short black streaks on the veins, excurved to vein 4, then strongly incurved, some white points beyond it on costa and whitish patch in submedian interspace; subterminal line white defined on inner side by fuscous and a series of somewhat dentate black marks, and with slight black marks beyond it, angled outwards at vein 7, excurved at middle and bent outwards to tornus; a terminal series of small black lunules; cilia white mixed with black. Hind wing whitish suffused and irrorated with fuscous, the veins and a discoidal lunule darker; a dark terminal line; cilia white with a dark line through them; the underside white irrorated with fuscous, a dark discoidal lunule and curved postmedial line with minute black streaks on the veins.

Hab. U.S.A., Nevada, 1 ♀ type, Arizona. *Exp.* 38 millim.

*2956. Trachea jocasta. (Plate CXII. fig. 30.)

Hadena jocasta, Smith, Proc. U.S. Nat. Mus. xxii. p. 470 (1900); Dyar, Cat. Lep. N. Am. p. 115.

♀. Head and thorax grey tinged with fuscous; patagia with

blackish streak near upper edge; abdomen grey. Fore wing grey tinged with fuscous; a black streak below base of cell; subbasal line represented by double black striæ from costa; antemedial line double, the outer line black, the inner indistinct, filled in with whitish, oblique and incurved at vein 1, a black streak from it to postmedial line in submedian fold; orbicular pale defined by black, oblique elliptical; reniform defined by black on inner side and with blackish line in centre; a faint medial black shade between the stigmata and at inner margin; postmedial line single, blackish, bent outwards below costa, then minutely dentate, excurved to vein 4, then incurved, some pale points beyond it on costa and a whitish shade on inner area; subterminal line pale, defined on inner side by a dark shade, angled outwards at vein 7 and excurved at middle; the terminal area slightly darker except at apex: a terminal series of small blackish lunules; cilia intersected with whitish. Hind wing whitish tinged with brown; the underside with indistinct postmedial line.

Hab. U.S.A., Illinois, Chicago, S. Dakota. *Exp.* 36 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

*2957. Trachea erica. (Plate CXII. fig. 31.)

Hadena erica, Smith, Can. Ent. 1905, p. 258.

Head and thorax bluish grey mixed with darker grey and blackish; frons with black bar; tegulæ with medial black line; patagia irrorated with black and with blackish streak near upper edge; abdomen grey. Fore wing bluish grey mixed with dark grey and blackish, the inner half of basal area, the area from apex to beyond the reniform, and the postmedial area in submedian interspace much paler with an ochreous tinge; a curved black streak below base of cell; subbasal line double, sometimes obsolete, from costa to submedian fold; antemedial line double, the inner line indistinct, erect and slightly sinuous; claviform defined by black, usually extending to postmedial line; orbicular and reniform with whitish annuli defined by black, the former oblique elliptical, the latter somewhat constricted at middle; postmedial line double at costa, bent outwards below costa, excurved and obsolescent to vein 4, then incurved; subterminal line pale, oblique towards costa, excurved below vein 7 and at middle; a terminal series of small black lunules; cilia with yellowish line at base and dark medial line. Hind wing whitish, the veins tinged with brown, in female wholly tinged with brown; a slight discoidal lunule and indistinct postmedial line; the underside with discoidal spot and postmedial line.

Hab. U.S.A., Utah, Stockton. *Exp.* 30–34 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

2958. Trachea pausis. (Plate CXII. fig. 32.)

Hadena pausis, Smith, Can. Ent. xxxi. p. 262 (1899); Dyar, Cat. Lep. N. Am. p. 115.

♂. Head, thorax, and abdomen grey mixed with brown and black; frons with lateral black bars; tegulæ with black line near tips; tarsi ringed with white. Fore wing grey suffused with brown and irrorated with black; a strong sinuous black streak below the cell from base to antemedial line; subbasal line represented by a black striga from costa; antemedial line indistinct, oblique from costa to submedian fold, then inwardly oblique; claviform elongate, slightly defined by black; orbicular and reniform with fuscous centres and slight whitish annuli defined by black, the former round, the latter slightly angled inwards on median nervure, a pale grey patch beyond it before postmedial line, which is indistinct, blackish defined by grey on outer side, bent outwards below costa, oblique to vein 5, then inwardly oblique and sinuous, some grey points beyond it on costa and a blackish mark in submedian fold; subterminal line indistinct, grey, excurved at vein 7, excurved and slightly waved at middle; the interspaces of terminal area with slight blackish streaks ending in small triangular black spots on termen; cilia blackish with a pale line at base. Hind wing whitish suffused and irrorated with brown; an indistinct dark discoidal spot; cilia whitish at base, fuscous at tips; the underside white irrorated with dark brown, a black discoidal spot and indistinct postmedial line with minute black streaks on the veins.

Hab. U.S.A., California, Los Angeles (*Coquillet*), 1 ♂ cotype. *Exp.* 34 millim.

*2959. Trachea luteocinerea. (Plate CXIII. fig. 1.)

Hadena luteocinerea, Smith, Proc. U.S. Nat. Mus. xxii. p. 468 (1900); Dyar, Cat. Lep. N. Am. p. 115.

♂. Head and thorax whitish mixed with yellowish and grey; patagia with black line near edges; vertex of thorax yellowish; abdomen white tinged with yellowish, the crests blackish. Fore wing grey mixed with yellowish, the area just below costa whitish, a slight black streak below base of cell; subbasal line represented by a faint striga from costa; antemedial line represented by a fuscous shade on costal area, then only by the contrast between the basal yellowish area and the fuscous-tinged medial area; claviform defined by black, acute at extremity and extending to postmedial line; orbicular white, oblique elliptical; reniform with white annulus defined by black; postmedial line double at costa, bent outwards below costa, then only defined by the contrast between the fuscous medial and yellowish postmedial area, excurved to vein 4, then incurved; subterminal line yellowish defined on inner side by grey, excurved below vein 7 and at middle, the area

beyond it darker; a terminal series of small black lunules. Hind wing whitish, a small discoidal lunule and fine terminal line; the underside with some dark irroration and discoidal lunule.

Hab. U.S.A., Montana. *Exp.* 36 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

2960. Trachea dilara. (Plate CXIII. fig. 2.)

Hadena dilara, Streck. Lep. Rhop. & Het., Suppl. i. p. 7 (1899); Dyar, Cat. Lep. N. Am. p. 115.
Hadena biltata, Smith, Can. Ent. 1906, p. 228.

♀. Head, thorax, and abdomen ochreous white tinged with flesh-colour and slightly mixed with brown; tegulæ with faint dark line near tips; tarsi blackish ringed with white. Fore wing ochreous white tinged with flesh-colour and irrorated with brown; subbasal line represented by a slight black striga from costa; a fuscous streak on costa before the antemdial line, which is defined by whitish on inner side, with blackish spot at costa, then minutely and irregularly dentate; claviform faintly defined by brown, acute at extremity; orbicular and reniform with slight fuscous centres and pale annuli defined by brown, the former upright, elliptical, the latter constricted at middle; an indistinct medial diffused line with blackish mark at costa; postmedial line with blackish mark at costa, slightly bent outwards below costa, then dentate, excurved to vein 4, then oblique, some pale points on a brownish patch beyond it on costa; subterminal line pale defined on inner side by brown suffusion, forming somewhat dentate marks at middle, somewhat angled outwards at vein 7 and excurved at middle; a terminal series of slight dark lunules; cilia ochreous white with diffused dark lines at middle and tips. Hind wing pale, uniformly suffused with ochreous brown; cilia yellowish white; the underside whitish irrorated with brown, a dark discoidal lunule and diffused curved postmedial line.

Hab. U.S.A., Colorado, Glenwood Springs, 1 ♀. *Exp.* 44 millim.

2961. Trachea genetrix. (Plate CXIII. fig. 3.)

Hadena genetrix, Grote, Can. Ent. x. p. 237 (1878); Smith, Cat. Noct. N. Am. p. 143.

♂. Head and thorax grey mixed with fuscous and faintly tinged with ochreous; palpi blackish at sides; frons with lateral black bars; tegulæ with blackish line near tips; tarsi black with pale rings; abdomen ochreous. Fore wing grey tinged with ochreous, irrorated with fuscous and in parts suffused with brown; a slight black streak below base of cell; subbasal line represented by a slight striga from costa; antemedial line defined by grey on inner side, minutely waved, retracted to inner margin; claviform slightly defined by black; orbicular and reniform very indistinctly defined

by black, the former with slight white annulus, round, the latter open above and expanding below, with pale patch beyond it; traces of an irregular medial line oblique from costa to median nervure; postmedial line defined by greyish on outer side, slightly bent outwards below costa, then minutely dentate, oblique to vein 4, where it is angled, then inwardly oblique, some pale points beyond it on costa and a slight black streak below vein 5; subterminal line whitish, with slight pale marks before it below veins 7, 6, angled outwards at vein 6 and excurved at middle; a terminal series of slight black lunules; cilia fuscous intersected with whitish. Hind wing grey with an ochreous tinge and nearly uniformly suffused with brown, the veins and a fine terminal line dark; cilia ochreous with a brown line through them; the underside whitish irrorated with fuscous, a discoidal point and minutely waved postmedial line.

♀. Greyer without any ochreous tinge.

Hab. U.S.A., Colorado, 1 ♂, Nevada, 1 ♀ type. *Exp.*, ♂ 36, ♀ 38 millim.

Larva. Head green, brownish tinted. Body uniform, olivaceous green; dorsal line white, slightly widened on the segments; subdorsal and substigmatal lines strongly widened on the segments, the widenings angular, those of the latter green-filled; lines partly edged with reddish. Food-plant, *Adenostoma fasciculatum*.—H. G. D.

2962. Trachea modica. (Plate CXIII. fig. 4.)

Apamea modica, Guen. Noct. i. p. 207 (1852); Smith, Cat. Noct. N. Am. p. 146.
Celæna subcedens, Wlk. x. 264 (1856).

Head and thorax purple-brown mixed with grey-white; palpi blackish at sides; frons with lateral black bars; tegulæ with black medial line; crests pale; tarsi blackish with pale rings; abdomen grey mixed with fuscous. Fore wing pale grey irrorated with brown and suffused in parts with pinkish, especially on inner antemedial area and medial area, the postmedial area whiter; subbasal line represented by double striæ from costa and cell; a slight black streak above inner margin before the antemedial line, which is indistinctly double, angled outwards below costa, then waved; claviform short and broad, defined by black; orbicular and reniform defined by black and with whitish centres slightly defined by brown, the former oblique elliptical, open above; an indistinct waved medial line; postmedial line indistinctly double, with two prominent black striæ from costa, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some minute black streaks beyond it on the veins and some pale points on costa; subterminal line indistinct, pale, defined by olive-brown on inner and outer sides, excurved below vein 7 and at middle, then minutely waved; a slight black streak beyond it below vein 6; a fine waved terminal line. Hind wing pale tinged with ochreous

and suffused with brown especially on terminal area; cilia white with a brown line through them; the underside ochreous white, the costal and terminal areas irrorated with brown, a discoidal lunule with pale centre, minutely waved postmedial line, and diffused subterminal band.

Hab. CANADA (*Norman*), 1 ♂, 1 ♀, Renfrew Co., 1 ♀, Ontario, Ottawa (*Saunders*), 1 ♂, London (*Saunders*), 1 ♀; U.S.A., Eastern, Middle, and Central States, New York, Trenton Falls (*Doubleday*), 1 ♀ type *subcedens*, Evans Center (*Grote, Packard*), 5 ♂, 1 ♂, Colorado. *Exp.* 32–34 millim.

2963. Trachea modiola. (Plate XCIII. fig. 5.)

Hadena modiola, Grote, Bull. Geog. Geol. Surv. Terr. v. p. 204 (1879); Smith, Cat. Noct. N. Am. p. 144.

♀. Head and thorax grey tinged with red-brown and mixed with blackish; frons with black bars; tegulæ with black medial line; patagia with black line near edges; tarsi blackish with pale rings; abdomen grey-brown, the dorsal crests black at tips. Fore wing grey slightly tinged with red-brown and irrorated with fuscous, the medial and terminal areas except at apex rather darker; subbasal line double filled in with whitish, waved, from costa to submedian fold; a blackish mark above inner margin before the antemedial line, which is defined by whitish on inner side, oblique, waved, angled inwards on vein 1; claviform small, blackish; orbicular and reniform white defined by black, the former oblique elliptical, defined by black at sides only, its centre tinged with brown, the latter incompletely defined except on inner side, its centre defined by brown; a blackish medial line oblique from costa to vein 2, then approximated to postmedial line, which is double at costa, slightly bent outwards below costa, then minutely waved and with double series of black points beyond it on the veins, strongly incurved below vein 4, some white points beyond it on costa; subterminal line whitish, defined on inner side by reddish brown, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules; cilia red-brown with series of whitish points at base. Hind wing brown with a golden gloss; a slight dark terminal line; cilia yellowish white with a slight brown line near base; the underside whitish irrorated with brown, a discoidal point and traces of postmedial line.

Hab. U.S.A., Wisconsin, 1 ♀ type. *Exp.* 34 millim.

*2964. Trachea mustelina. (Plate CXIII. fig. 6.)

Hadena mustelina, Smith, Proc. U.S. Nat. Mus. xxii. p. 469 (1900); Dyar, Cat. Lep. N. Am. p. 115.

♂. Head and tegulæ chocolate-brown; thorax bluish grey tinged with brown, the patagia edged with brown scales behind; abdomen grey tinged with brown. Fore wing bluish grey mixed with brown; subbasal line double, the inner line dark brown, the outer

indistinct, excurved, from costa to submedian fold; antemedial line double, the inner line indistinct, brown, the outer black at costa, then represented by a few black scales, somewhat oblique and curved; claviform defined by black and below by white scales, with a whitish streak defined by black above before it in submedian fold; orbicular and reniform pale defined by blackish, the former oblique elliptical, open above, the cell before and between them blackish; postmedial line double, with small black spots at costa, bent outwards below costa and oblique below vein 4, some whitish points beyond it on costa; subterminal line defined on inner side by some black scales and by a dark shade at costa, somewhat excurved below vein 7 and at middle; the terminal area slightly darker except at apex; a waved brown terminal line. Hind wing whitish suffused with brown; cilia white with a dark line at base; the underside white, the costal area tinged with vinous red, a blackish discoidal spot.

Hab. U.S.A., California, Sta. Cruz Mts. *Exp.* 34 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

Larva. Head pale brown. Body uniform, shaded with reddish brown, a linear whitish dorsal line; substigmatical band broad, sharply edged on both sides, yellowish white, contrasted. Shields concolorous with body.—H. G. D.

2965. Trachea intermedia. (Plate CXIII. fig. 7.)

Apamea intermedia, Leech, Trans. Ent. Soc. 1900, p. 60.

♀. Head, thorax, and abdomen greyish ochreous mixed with some brown. Fore wing rufous and ochreous irrorated with black, the postmedial area paler except towards costa; subbasal line double filled in with whitish waved, from costa to submedian fold; antemedial line double filled in with whitish, waved, oblique; claviform small, defined by black; orbicular and reniform rufous with pale annuli defined by black, the former oblique elliptical, open above, the latter elliptical; an indistinct medial line oblique and waved below the cell; postmedial line indistinctly double filled in with whitish, slightly bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, oblique between veins 2 and 1, some pale points beyond it on costa; subterminal line pale defined by rufous on inner side, excurved below vein 7 and at middle; a terminal series of prominent black lunules; cilia black and grey with pale line at base. Hind wing whitish uniformly suffused with brown; the underside whitish, with slight discoidal spot and curved postmedial and subterminal lines.

Hab. Japan, Yokohama (*Pryer*), 1 ♀ type. *Exp.* 32 millim.

2966. Trachea cuneata. (Plate CXIII. fig. 8.)

Mamestra cuneata, Leech, P. Z. S. 1889, p. 486, pl. 50. f. 12.

Head and thorax grey-brown slightly tinged with olive and

rufous; tarsi fuscous with pale rings; abdomen brownish grey. Fore wing pale olive-brown slightly tinged with rufous and irrorated with fuscous; subbasal line double filled in with grey, waved, from costa to submedian fold; antemedial line double filled in with grey, waved, somewhat oblique; claviform small, defined by black; orbicular and reniform with grey annuli, the former defined by black at sides, the latter round with a black bar on inner edge; an indistinct waved medial line oblique from costa to median nervure; postmedial line black, double and filled in with grey towards costa, bent outwards below costa, then dentate, incurved at discal fold and below vein 4, some pale points beyond it on costa; subterminal line greyish slightly defined by fuscous on inner side, and with slight dentate black marks before it below costa and at middle, excurved below vein 7 and at middle and angled inwards at discal fold, the area beyond it slightly tinged with fuscous except at apex; a terminal series of small black lunules; cilia brown with a dark line through them. Hind wing greyish suffused with brown, the terminal area with fuscous; a slight dark postmedial line; cilia fuscous at base, whitish at tips; the underside grey with slight discoidal lunule, curved postmedial line, and somewhat diffused subterminal line.

Ab. 1. Fore wing with the ante- and postmedial areas except towards costa and the inner medial area pale suffused with rufous.

Hab. Japan, Yokohama (*Pryer*), 6 ♂, 1 ♀ type. *Exp.* 32–38 millim.

2967. **Trachea intermixta.** (Plate CXIII. fig. 9.)

Apamea intermixta, Leech, Trans. Ent. Soc. 1900, p. 63.

♂. Head and thorax red-brown mixed with dark brown; palpi blackish; frons with black bar; tegulæ with slight blackish lines at base, middle, and tips; thorax black; tarsi black ringed with white; abdomen grey suffused with fuscous brown, the crests blackish. Fore wing red-brown largely suffused with blackish especially on inner area, before the antemedial line, beyond the postmedial line at costa and middle, and on terminal area; a slight black streak below base of cell; subbasal line double, waved, from costa to submedian fold; antemedial line double, waved, oblique from costa to submedian fold, where it is connected by a black streak representing the claviform with the postmedial line; orbicular and reniform pale rufous defined by black and with some fuscous in centres, the former round, a dark patch between their upper parts connected with costa by a black striga; postmedial line double, bent outwards below costa, then minutely dentate, oblique below vein 5 and angled inwards in submedian fold, some pale points beyond it on costa; subterminal line slightly defined by brown on inner side, excurved below vein 7, dentate at veins 4, 3 and angled inwards at discal and submedian folds; cilia blackish intersected with grey. Hind wing greyish suffused with reddish brown especially on the veins and terminal area; cilia white with a brown

line through them ; the underside whitish irrorated with brown, a black discoidal spot, curved crenulate postmedial line, and faint diffused subterminal line.

Hab. W. China, Ta-chien-lu (*Pratt*), 1 ♂ type. *Exp.* 36 millim.

2968. Trachea ethnica. (Plate CXIII. fig. 10.)

Hadena ethnica, Smith, Can. Ent. xxxi. p. 263 (1899); Dyar, Cat. Lep. N. Am. p. 115.

Head and thorax fuscous brown irrorated with grey ; tarsi brown tinged with white ; abdomen dark brown irrorated with grey. Fore wing grey-brown irrorated with a few blackish scales ; subbasal line absent ; antemedial line hardly traceable, double, angled outwards below costa, then erect ; claviform represented by a slight dark mark ; orbicular and reniform very indistinct, fuscous slightly defined by blackish, the former round ; postmedial line represented by a series of faint dark points on the veins, bent outwards below costa, excurved to vein 4, then oblique, some white points beyond it on costa ; subterminal line faintly defined by fuscous on inner side, angled outwards at vein 7 and excurved at middle ; a terminal series of black points ; a fine pale line at base of cilia. Hind wing fuscous brown ; a slight dark terminal line ; cilia ochreous white with diffused brown line through them ; the underside whitish thickly irrorated with brown, a faint discoidal spot and curved postmedial line.

Hab. U.S.A., California, 1 ♂, 1 ♀. *Exp.*, ♂ 42, ♀ 46 millim.

*2969. Trachea parcata. (Plate CXIII. fig. 11.)

Hadena parcata, Smith, J. N.Y. Ent. Soc. xi. p. 9 (1903).

Head and thorax reddish ochreous tinged with fuscous ; abdomen somewhat paler. Fore wing reddish ochreous tinged with fuscous ; a fine black streak below base of cell ; subbasal line just traceable ; antemedial line with fuscous point at costa, oblique to vein 1 and bent inwards to inner margin ; claviform hardly indicated ; orbicular very indistinct, oblique oblong ; reniform indistinctly defined, rather paler on outer edge ; an indistinct diffused dark medial shade darkening the lower part of reniform, bent inwards below the cell ; postmedial line with dark point at costa, bent outwards below costa, excurved to vein 4, then oblique ; subterminal line defined by the terminal area being greyish interrupted at veins 4, 3 by a pale W-mark ; cilia intersected with whitish. Hind wing pale fuscous, whitish at base ; an indistinct discoidal lunule ; cilia whitish ; the underside with indistinct discoidal spot and postmedial line.

Hab. U.S.A., Wyoming, Yellowstone Park. *Exp.* 40 millim. This species is unknown to me ; figured from a drawing from type in Coll. J. B. Smith.

2970. Trachea commoda. (Plate CXIII. fig. 12.)

Xylina commoda, Wlk. xi. 760 (1857); Smith, Cat. Noct. N. Am. p. 153.
Hadena alberta, Smith, J. N.Y. Ent. Soc. xi. p. 8 (1903).

Head, thorax, and abdomen fuscous brown mixed with grey; tarsi ringed with whitish. Fore wing fuscous brown tinged with purplish grey and irrorated with white scales; antemedial line very indistinct, waved, oblique; claviform absent; orbicular and reniform with incomplete pale annuli defined by brown, the former very oblique elliptical, the latter somewhat constricted at middle; postmedial line defined by greyish on outer side, bent outwards below costa, oblique and sinuous below vein 5, some white points beyond it on costa; subterminal line represented by a series of slight whitish marks defined on inner side by dentate brown marks, angled outwards at vein 7 and excurved at middle, some dark streaks beyond it in the interspaces; cilia greyish with series of white points at base followed by a blackish line. Hind wing greyish suffused with fuscous brown, the terminal area darker; cilia greyish with a black line near base; the underside grey, the costal and terminal areas irrorated with brown, a dark discoidal spot and curved postmedial line.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), 2 ♂, 1 ♀ cotype *alberta*; U.S.A. (*Doubleday*), 1 ♀ type. *Exp.* 44 millim.

*2971. Trachea enigra. (Plate CXIII. fig. 13.)

Xylophasia enigra, Smith, Psyche, xi. p. 54 (1904).

♂. Dark brown mixed with fuscous and grey; tegulæ with slight dark medial line; tarsi fuscous with pale rings; abdomen greyish brown, the dorsal crests mixed with black. Fore wing dark brown mixed with some grey and irrorated with black; subbasal line black defined by greyish on outer side, waved, from costa to submedian fold; antemedial line indistinct, double, waved, oblique from costa to submedian fold; claviform small, defined by black; orbicular and reniform with slight grey annuli defined by black, the former oblique elliptical; an indistinct slightly waved medial line oblique from costa to submedian fold, then inwardly oblique; postmedial line indistinct, blackish slightly defined by grey on outer side, bent outwards below costa, then dentate, incurved below vein 4, some white points beyond it on costa; subterminal line indistinct, whitish with blackish patch before it on costa, slight dentate marks before it at middle and slight dark marks beyond it at middle, excurved below vein 7, angled inwards at discal fold and outwards at veins 4, 3; a terminal series of small black lunules; cilia with a dark line through them. Hind wing greyish nearly uniformly suffused with brown; a slight dark terminal line; cilia brownish white with series of dark marks from apex to vein 2; the underside grey tinged with brown and irrorated

with fuscous, a black discoidal spot, indistinct waved postmedial line and traces of diffused subterminal band.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), cotype † ♂ in Coll. J. B. Smith. *Exp.* 40 millim.

*2972. Trachea espumosa. (Plate CXIII. fig. 14.)

Euvois espumosa, Dogn. Ann. Soc. Ent. Belg. xli. p. 246 (1897).

♂. Head and thorax pale reddish brown; palpi blackish; frons bright pink; front part of thorax largely mixed with black; pectus with the hair bright pink; tarsi ringed with white; abdomen pale grey-brown, the dorsal crests rather darker. Fore wing red-brown irrorated with black, the terminal area greyish; the subbasal line represented by black points below costa and cell; the antemedial line interrupted, double, waved, connected with the postmedial line by a diffused black fascia in submedian fold, with a black striga from its upper edge representing the extremity of claviform; orbicular an ill-defined yellowish spot; reniform very indistinct, with a yellow spot with points above and below it on its outer edge; a waved medial black shade angled outwards to lower angle of cell; the postmedial line indistinct, dentate, bent outwards below costa, excurved to vein 4, then incurved; the subterminal line formed by a series of dentate blackish marks, somewhat excurved below costa and at middle; a terminal series of small black lunules. Hind wing reddish brown, slightly paler towards base; two small dark spots on veins 2 and 1 towards termen; cilia white at tips; the underside whitish, the costal and terminal areas irrorated with brown, a dark discoidal spot, irregularly waved postmedial line and traces of a subterminal line.

Hab. Ecuador, Loja, type † ♂ in Coll. Dognin. *Exp.* 44 millim.

2973. Trachea opposita.

Mamestra opposita, Wlk. xxxii. 667 (1865); Hmpsn. Ill. Het. B. M. ix. p. 95, pl. 162. f. 12; id. Moths Ind. ii. p. 209.

Head and thorax black slightly mixed with rufous and grey; palpi black above; frons with lateral black bars; tarsi black with whitish rings; abdomen rufous suffused with black and with some grey hair at base. Fore wing rufous, almost wholly suffused with fuscous black and irrorated with black; subbasal line double, black, waved, from costa to submedian fold; antemedial line double, waved, oblique; claviform short and broad, defined by black; orbicular defined by black, narrow, oblique elliptical; reniform defined by black and with pale rufous spot on its outer edge; traces of a waved black medial line, oblique from costa to below cell; postmedial line double, bent outwards below costa, then waved, oblique to vein 3 near subterminal line, then incurved, some pale rufous points beyond it on costa; subterminal line represented by a series of small pale rufous spots, defined at middle

on inner and outer sides by short black streaks, somewhat angled outwards at vein 7; a terminal series of small black lunules; cilia with fine whitish line at base. Hind wing whitish suffused with fuscous brown except at base; the underside white, the costal area and veins suffused with pale reddish brown, a slight discoidal lunule and minutely waved postmedial line.

This may be a black-suffused form of *T. consummata*.

Hab. Punjab, Simla (*Harford*), 1 ♂; Madras, Shevaroys (*Campbell*), 1 ♂, Coimbatore (*Walhouse*), 1 ♂ type; Ceylon, 1 ♀. *Exp.* 36–40 millim.

2974. Trachea consummata.

Hadena consummata, Wlk. xi. 591 (1857).
Hadena confundens, Wlk. xi. 757 (1857); Moore, Lep. Ceyl. ii. p. 38, pl. 148. f. 5; Hmpsn. Moths Ind. ii. p. 208.
Mamestra thoracica, Wlk. xv. 1684 (1858).
Hadena inextricans, Wlk. xv. 1729 (1858).
Hadena tulipifera, Saalm. Lep. Madag. p. 321, pl. xi. f. 195 (1891).

Head and thorax bright rufous with some black and whitish scales; palpi black above; frons with lateral black bars; tarsi black ringed with rufous; abdomen rufous. Fore wing bright rufous, slightly suffused with brown and irrorated with black; subbasal line double, waved, from costa to submedian fold; antemedial line double, waved, oblique towards inner margin; claviform quadrate, defined by black below and at extremity; orbicular and reniform slightly defined by black, the former oblique elliptical, the latter irregular and with some whitish points on outer edge; a medial blackish striga from costa; postmedial line double, bent outwards below costa, then waved, oblique to vein 3, near subterminal line, then incurved, some pale points beyond it on costa; subterminal line represented by a series of small ochreous spots with minute dentate dark marks before them at middle, slightly angled outwards at vein 7; a terminal series of small black lunules; cilia rufous with a punctiform yellowish line at base. Hind wing whitish suffused with red-brown except basal half of costal area; a fine waved black terminal line; cilia whitish tinged with rufous. Underside of fore wing whitish tinged with brown except inner area, the costal area rufous; a dark postmedial line angled outwards below costa and at middle and diffused subterminal band; hind wing whitish, the costal area suffused with rufous, a black discoidal lunule, irregularly crenulate postmedial line, diffused subterminal band, and terminal series of black lunules.

Ab. 1. Hind wing entirely suffused with fuscous brown; underside of fore wing suffused with fuscous leaving the costal area rufous to postmedial line.

Ab. 2. Hind wing of male with the basal half much whiter and with dark postmedial line.

Ab. 3. Fore wing without white points on outer edge of reniform.

Ab. 4. Fore wing with prominent white spot on outer edge of reniform.

Ab. 5. Fore wing with reddish spot on outer edge of reniform.

Hab. Br. E. Africa, Athi-ya-mawe (*Betton*), 1 ♂, Nairowa (*Betton*), 1 ♂, Lagari (*Betton*), 1 ♂, Nairobi (*Betton*), 1 ♀; Transvaal (*Cholmley*), 1 ♂; Natal, type † in Mus. Oxon., Estcourt (*Hutchinson*), 3 ♂, 1 ♀, Victoria distr. (*Gooch*), 1 ♂, Malvern (*Millar*), 1 ♀, Durban (*Mrs. Plant, Gueinzuis, Gooch, Leigh*), 2 ♂, 3 ♀, type *thoracica*; Madagascar; Mauritius, Curepipe (*Tulloch*), 1 ♂; Aden (*Yerbury*), 1 ♂; C. China, Kiukiang (*Pratt*), 1 ♀; Punjab, Dharmsála (*Hocking*), 1 ♀; Bengal, 1 ♂, Barackpur, 1 ♂; Bombay (*Swinhoe*), 1 ♂, 1 ♀; Madras, Gooty (*Campbell*), 1 ♂, Nilgiris (*Hampson*), 3 ♂, 2 ♀; Ceylon, 2 ♂, 4 ♀ type *confundens*, Pundaloya (*Green*), 1 ♂, Trincomali (*Yerbury*), 1 ♀; Java (*Horsfield*), 1 ♂, 1 ♀; Queensland, Brisbane (*Turner*), 1 ♂. *Exp.* 38–42 millim.

Larva. Brownish grey, the 4th and 11th somites humped, subdorsal vesicular black marks on 4th and 5th somites; an irregular dorsal and lateral black band on 4th somite and dorsal patch on 12th somite; stigmata black.

2975. Trachea siderifera. (Plate CXIII. fig. 15.)

Hadena siderifera, Moore, P. Z. S. 1881, p. 357; Hmpsn. Moths Ind. ii. p. 208.

Head and thorax dark purplish brown with a few white and black scales; palpi blackish above; frons with lateral black bars; tegulæ with traces of medial dark line; tarsi black ringed with rufous; abdomen dark purplish brown. Fore wing dark purplish brown; subbasal line double, black, waved, from costa to submedian fold; antemedial line double, black, waved, oblique; claviform large, quadrate, defined by black on outer side and below; orbicular defined by black, oblique elliptical; reniform defined by black on inner side and below with white spot on outer edge with white points above and below it; a waved black medial line oblique from costa to below cell; postmedial line double, bent outwards below costa, then waved, oblique to vein 3 near subterminal line, then incurved, with slight white points on it at the veins and with some pale points beyond it on costa; subterminal line indistinct, ochreous, defined on inner side at middle by small dentate black marks and with small black spots on outer edge, somewhat angled outwards at veins 7, 6, 4, 3; a terminal series of black points; cilia with minute black points at base followed by a dark line. Hind wing deep fuscous brown, the cilia rufous; the underside greyish tinged with rufous and irrorated with brown, a black discoidal spot, sinuous postmedial line, and diffused subterminal band.

This may be a purplish-brown form of *T. consummata*.

Hab. W. China, Omei-shan, 1 ♀, Wa-shan (*Pratt*), 1 ♂, Wa-ssu-kou, 1 ♀, Ta-chien-lu (*Pratt*), 1 ♀; Punjab, Kulu, Sultanpur (*G. Young*), 1 ♂, 1 ♀, Simla (*Reed, Swinhoe, Harford*), 3 ♂, 2 ♀ type, Dharmsála (*Hocking*), 3 ♂, 1 ♀; Sikhim. *Exp.* 44–50 millim.

2976. Trachea connivens.

Apamea connivens, Feld. Reis. Nov. pl. 109. f. 27 (1874).
Argotis quadrisigna, Moore, P. Z. S. 1881, p. 350; Hmpsn. Moths Ind. ii. p. 208.
Argotis placida, Moore, Lep. Atk. p. 117, pl. iv. f. 19 (1882).

Head and thorax pale brownish grey slightly irrorated with fuscous; palpi black above; tegulæ with basal black points at middle and sides; tarsi black with pale rings; abdomen brownish grey. Fore wing pale brownish grey slightly irrorated with fuscous; subbasal line black, double, waved, from costa to submedian fold; antemedial line double, waved, oblique; claviform short and broad, defined by black except above; orbicular incompletely defined by black, somewhat elliptical; reniform with black bar on inner side and pale rufous or grey spot on outer with slight points above and below it, otherwise undefined; a waved medial dark line oblique from costa to submedian fold; postmedial line indistinctly double, slightly bent outwards below costa, then waved, oblique to vein 3 near subterminal line, then incurved; subterminal line represented by a series of small pale rufous dentate marks, defined at middle on inner side by small dentate black marks and on outer side by black points, somewhat angled outward at vein 7; a terminal series of black points; cilia with pale rufous line at base. Hind wing whitish tinged with fuscous especially on terminal area; cilia yellowish white; the underside white, the costal area slightly irrorated with brown, a slight discoidal lunule and traces of postmedial and subterminal lines on costal half.

This may be a grey form of *T. consummata*.

Hab. Natal, Estcourt (*Hutchinson*), 1 ♀, Durban (*Leigh*), 1 ♀; C. Colony, Transkei (*Miss F. Barrett*), 1 ♂; Kashmir; Punjab, Kulu, Sultanpur (*G. Young*), 1 ♂, 2 ♀, Simla (*Reed, Harford*), 4 ♀, Dharmsála (*Hocking*), 4 ♂, 8 ♀, Deyra Dhun, 1 ♂ type; Bengal, Calcutta. *Exp.* 36–48 millim.

*2977. Trachea dinavana, n. n. (Plate CXIII. fig. 16.)

Eurois dinawa, Beth.-Baker, Nov. Zool. xiii. p. 196 (1906), nec *Euplexia dinawa*, p. 195.

♂. Head and thorax rufous; palpi black above; lower part of frons white; tegulæ with black medial line; tarsi blackish ringed with rufous; abdomen pale rufous. Fore wing rufous slightly irrorated with black; subbasal line represented by black striæ from costa and cell; antemedial line with blackish mark at costa, almost obsolete to median nervure, then double, black, angled outwards in submedian fold and above inner margin and inwards on vein 1; claviform large, defined by black except above; orbicular defined by black at sides, oblique oblong, almost confluent with the reniform, which is defined by black on inner side and below and with white lunule on outer edge, with one white point above it and two below it; a brown shade from middle of costa with a black striga on it and indistinct waved line from lower angle of cell to inner margin;

postmedial line with double black spots at costa, then indistinct, bent outwards below costa, then waved with white points on the veins, oblique to vein 3, there incurved, some whitish points beyond it on costa and a black fascia below vein 3 from it to termen; subterminal line hardly traceable, pale, defined on inner side by two minute V-shaped marks at middle, excurved below vein 7, and with slight black streaks from it to termen in the interspaces. Hind wing whitish suffused with pale rufous: a faint sinuous postmedial line and diffused subterminal shade; the underside white tinged with rufous, a small discoidal lunule and very indistinct curved postmedial line with minute black streaks on the veins.

Hab. Br. N. Guinea, Dinawa (*Pratt*), type † ♂ in Coll. Bethune-Baker. *Exp.* 44 millim.

2978. Trachea niveiplaga.

Hadena niveiplaga, Wlk. xi. 593 (1857); Hmpsn. Moths Ind. ii. p. 208.
Mamestra terranea, Butl. Ill. Het. B. M. vii. p. 53, pl. 127. f. 10 (1889).
Bombycia hodita, Swinh. A. M. N. H. (6) xv. p. 6 (1895).

(*terranea*). Head and thorax dull red-brown; palpi blackish at sides; frons with lateral black bars; tarsi black with pale rings; abdomen grey-brown, the dorsal crests blackish. Fore wing dull reddish brown; subbasal line double, waved, from costa to submedian fold; antemedial line double, waved, oblique; claviform small, defined by black; orbicular incompletely defined by black, round; reniform defined by black on inner side and below and slightly on outer, with two whitish points at lower extremity; a waved medial line, oblique from costa to below cell; postmedial line indistinctly double, bent outwards below costa, then minutely dentate and with black and white points beyond it on the veins, somewhat angled inwards at discal fold and incurved below vein 5, some pale points beyond it on costa; subterminal line indistinct, greyish, defined on inner side by slight dentate black marks and with slight black spots beyond it at middle, somewhat angled outwards at veins 7, 4, 3; a terminal series of small black lunules. Hind wing deep fuscous; the cilia whitish with a dark line through them; the underside grey slightly tinged with rufous and thickly irrorated with fuscous, a blackish discoidal spot and sinuous postmedial line.

Ab. 1. *niveiplaga*. Slightly greyer; fore wing with the medial area suffused with black except towards costa and inner margin, reniform with large pure white lunule on outer edge.

Hab. Punjab, Kulu (*Hocking*), 1 ♂, Dalhousie, 1 ♀, Simla (*Harford*), 1 ♂, Dharmsála (*Hocking*), 5 ♂, 3 ♀ type *terranea*, Murree, 1 ♀ type *hodita*. *Exp.* 40–42 millim. Type † in Mus. Oxon.

2979. Trachea fasciata. (Plate CXIII. fig. 17.)

Xylophasia fasciata, Leech, Trans. Ent. Soc. 1900, p. 68.

Head and thorax bright red-brown, the metathoracic crest with some white scales; sides of palpi blackish; frons with lateral black

bars; tarsi with slight pale rings; abdomen pale rufous. Fore wing bright red-brown, the ante- and postmedial areas grey-white except towards costa; subbasal line double filled in with white, waved, from costa to submedian fold; antemedial line double filled in with white, waved, oblique from costa to submedian fold; claviform moderate, defined by black; orbicular and reniform defined by black, the former round, the latter with its centre defined by blackish with some white in centre and white spots on its outer edge; an indistinct slightly waved medial line, oblique from costa to median nervure; postmedial line black defined by white on outer side, bent outwards below costa, then dentate and produced to white points on the veins, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line whitish towards costa, then only defined by the contrast between the postmedial and terminal areas, angled outwards at vein 7, excurved at middle and angled inwards at discal and submedian folds; a terminal series of small black lunules; cilia with a fine pale line at base. Hind wing ochreous uniformly suffused with reddish brown; a faint discoidal point and curved postmedial line; the underside whitish tinged with rufous, a dark discoidal spot, sinuous postmedial line, and terminal series of black lunules.

Hab. W. China, Chia-kou-ho (*Pratt*), 1 ♂ type, Pu-tsu-fang, 1 ♂, 1 ♀; Punjab, Kulu, Sultanpur (*Young*), 1 ♀, Subathu (*Harford*), 1 ♀; Sikhim Tibet, Yatong (*Hobson*), 1 ♂. *Exp.* 38–44 millim.

2980. Trachea rubrirena.

Mamestra rubrirena, Treit. Schmett. Eur. v. 2, p. 159 (1825); Frr. Beitr. pl. 98. f. 2, Geyer. Eur. Schmett., Noct. f. 826; Herr.-Schäff. Eur. Schmett., Noct. f. 57; Staud. Cat. Lep. pal. p. 173

Hadena feisthamelii, Boisd. Ann. Soc. Ent. Fr. 1833, p. 375, pl. 14. f. 1; id. Icones, pl. 84. f. 6; Dup. Lép. Fr., Suppl. iii. p. 226, pl. 21. f. 2.

Hadena hercyniæ, Staud. Cat. Lep. Eur. p. 100 (1871).

Head and thorax black-brown with a few white hairs, the metathoracic crest bright rufous; tarsi black with pale rings; abdomen reddish brown with some grey at base. Fore wing black-brown mixed with some rufous; subbasal line double filled in with whitish, waved, from costa to submedian fold; antemedial line double filled in with some rufous, waved, oblique from costa to submedian fold; claviform small, defined by black; orbicular and reniform large, pale rufous defined by black, the former irregularly rounded; a diffused black medial shade; postmedial line black defined by pale rufous on outer side and with whitish spot at costa, bent outwards below costa, then dentate and produced to white points on the veins, excurved to vein 4, then oblique and incurved in submedian interspace, some white points beyond it on costa; subterminal line pale rufous, defined on inner side by dentate black marks, at submedian fold extending to postmedial line, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of small black lunules; cilia black at base, pale rufous at tips. Hind wing whitish tinged with reddish brown, the veins and terminal

area darker, a slight discoidal spot and curved postmedial line; a slight dark terminal line; cilia whitish with a dark line through them; the underside whitish, the costal and terminal areas tinged with brown and strongly irrorated with fuscous, a dark discoidal spot and strong sinuous postmedial line.

Ab. 1. *hercyniæ*. Fore wing almost black, the markings distinct, whitish.—S.E. Germany.

Hab. Germany, Silesia, Bohemia, Hartz Mts., Zeller Coll.; Austria; Hungary; Switzerland, Zeller and Leech Colls., Valais, Frey Coll., Engadine, Zelier and Frey Colls.; Norway; Finland; Russia, St. Petersburg, Frey Coll. *Exp.* 46–52 millim.

2981. Trachea furva.

Noctua furva, Schiff. Wien. Verz. p. 81 (1776); Hübn. Eur. Schmett., Noct. f. 407; Dup. Lép. Fr., Suppl. iii. p. 276, pl. 25. f. 5; Herr.-Schäff. Eur. Schmett., Noct. f. 290; Staud. Cat. Lep. pal. p. 172.
Noctua freyeri, Frr. Neue Beitr. Schmett. ii. p. 107, pl. 159 (1835).
Mamestra infernalis, Ev. Bull. Soc. Mosc. 1842, iii. p. 547.
Hadena gemmosa, Herr.-Schäff. Eur. Schmett., Noct. f. 427 (1845).

Head and thorax reddish brown mixed with black and some white scales; tegulæ with slight dark medial line and whitish tips; patagia with blackish line near upper edge; tarsi fuscous ringed with white; abdomen grey tinged with brown. Fore wing reddish brown mixed with some whitish and irrorated with blackish; subbasal line represented by double black striæ filled in with grey from costa and cell; some black irroration above inner margin before the antemedial line, which is double filled in with grey, oblique, waved; claviform small with diffused black outline; orbicular with slight whitish annulus defined by black, irregularly rounded; reniform with white annulus defined by black and pale central lunule, its inner edge straight, its upper extremity rather produced; a rather diffused blackish medial line, oblique from costa to median nervure, then minutely waved; postmedial line defined by grey on outer side, indistinctly double on costal half, bent outwards below costa, then minutely dentate and produced to black and white points on the veins, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line white, defined on inner side by small dentate black marks, excurved below vein 7 and dentate at veins 4, 3; a terminal series of small black lunules; cilia with fine white line at base, black medial line and brownish tips. Hind wing whitish tinged with brown, the terminal area suffused with fuscous brown; a faint discoidal spot, traces of a sinuous postmedial line and a white subterminal line towards tornus; cilia white with brown line near base except towards tornus; the underside white, the costal area irrorated with brown, a brown discoidal lunule, curved postmedial line from costa to vein 2, diffused subterminal band, and fine terminal line.

Hab. Britain, Leech Coll.; France, Pyrenees; Germany, Zeller and Leech Colls.; Austria; Hungary; Switzerland, Valais, Frey Coll., Zermatt (*A. H. Jones*), Engadine, Frey Coll.; Italy;

Dalmatia, Leech Coll.; Scandinavia; Russia, St. Petersburg, Frey Coll.; Armenia; Persia; W. Turkestan, Fergana, Sarawschan, Issyk Kul, Ala Tau; W. Siberia, Altai, 1 ♀; E. Turkestan, Ili; E. Siberia, Amurland. *Exp.* 40–44 millim.

Larva. Meyr. Brit. Lep. p. 132; Barrett, Lep. Brit. iv. p. 352, pl. 176. f. 1.

Pale pinkish ochreous; warts rather small, reddish brown; head and thoracic plate reddish brown. Food-plants, Grasses. 9–6.

2982. Trachea anceps.

Noctua anceps, Schiff. Wien. Verz. p. 81 (1776); Hübn. Eur. Schmett., Noct. f. 484.
Noctua sordida, Borkh. Nat. Eur. Schmett. iv. p. 578 (1792); Staud. Cat. Lep. pal. p. 172.
Noctua contigua, Haw. Lep. Brit. p. 192 (1809), nec Vill.
Apamea infesta, Ochs. Schmett. Eur. iv. p. 76 (1816), non descr.; Treit. Schmett. Eur. v. (2) p. 112 (1825).
Noctua aliena, Dup. Lép. Fr. vii. p. 29, pl. 102, ff. 2, 6; Steph. Ill. Brit. Ent., Haust. iii. p. 4 (nec Hübn.).
Luperina renardii, Boisd. Ind. Meth. add. p. 5 (1829).
Hadena engelhartii, Duurloo, Ent. Medd. ii. p. 86 (1889).

Head and thorax reddish brown, mixed with ochreous on head and tegulæ and with some grey on thorax; sides of palpi and frons blackish; tegulæ with dark tips; patagia with some black scales near upper edge; tarsi black ringed with white; abdomen grey-brown, the dorsal crests tipped with fuscous and grey. Fore wing reddish brown mixed with whitish and with slight dark irroration; subbasal line defined by whitish on outer side, angled outwards below costa and ending at submedian fold; a slight oblique dark streak above inner margin near base; antemedial line double filled in with whitish, oblique and slightly sinuous from costa to submedian fold, then angled inwards on vein 1; claviform short and broad, faintly defined by brown above; orbicular and reniform slightly defined by brown, the former large, very obliquely elliptical, the latter angled inwards on median nervure and with white marks on outer and lower edges; a slight brown medial line, oblique from costa to median nervure, then inwardly oblique and waved; postmedial line defined by whitish on outer side, double at costa, bent outwards below costa, then dentate, excurved to vein 4, then obliquely incurved, some white points beyond it on costa; subterminal line pale, defined on inner side by red-brown forming somewhat dentate marks at discal and submedian folds, excurved below vein 7 and at middle; a terminal series of small black lunules; cilia fuscous intersected with ochreous. Hind wing whitish tinged with reddish brown, the veins and terminal area suffused with fuscous brown; cilia white with slight brownish line through them except towards tornus; the underside white, the costal area irrorated with rufous, a brown discoidal lunule, traces of a postmedial line from costa to vein 6, a slight maculate subterminal band.

Ab. 1. *renardi*. Pale.

Ab. 2. *engelharti*. Much paler; fore wing with the markings indistinct.

Hab. Britain, Leech Coll.; France, Sand and Leech Colls.; Denmark, Leech Coll., Harboor (*Engelhart*); Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland; Spain, Aragon; Italy; Rumelia; Turkey, Leech Coll.; S. Sweden; Russia, Urals, Sarepta (*Christoph*); Armenia; Asia Minor, Taurus; Persia; E. Siberia. *Exp.* 38–44 millim.

Larva. Meyr. Brit. Lep. p. 133; Barrett, Lep. Brit. iv. p. 349, pl. 175. f. 2. Pale brown; dorsal and subbasal lines obscurely darker; lateral series of oblique blackish marks; head and thoracic plate blackish brown. Food-plants, Grasses. 9–3.

2983. Trachea oblonga.

Noctua nigricans, View. Schmett. ii. p. 66 (1789), nec Linn.; Treit. Schmett. Eur. v. (2) p. 141; Steph. Ill. Brit. Ent., Haust. iii. p. 193, pl. 24. f. 12.
Noctua oblonga, Haw. Lep. Brit. p. 188 (1809).
Noctua lunulina, Haw. Lep. Brit. p. 192 (1809); Steph. Ill. Brit. Ent., Haust. ii. p. 130.
Noctua abjecta, Hübn. Eur. Schmett., Noct. f. 539 (1818); Frr. Neue Beitr. iv. p. 35, pl. 311. f. 1; Staud. Cat. Lep. pal. p. 173.
Luperina fribolus, Boisd. Icones, pl. 84. f. 4 (1832).
Hadena variegata, Staud. Cat. Lep. Eur. p. 101 (1871).

(*abjecta*). Head and thorax fuscous brown mixed with some grey; pectus with some yellowish hair; abdomen pale grey-brown, the dorsal crests fuscous and grey, the ventral surface yellowish mixed with brown. Fore wing glossy fuscous brown slightly irrorated with greyish; subbasal line represented by faint double dark striæ from costa; traces of an oblique dark streak above inner margin before the antemedial line, which is indistinctly double filled in with greyish, waved, oblique to submedian fold, then angled inwards on vein 1 and bent inwards to inner margin; claviform minute with very indistinct dark outline; orbicular and reniform indistinctly defined by brown, the former round, the latter with whitish points on outer edge and lower extremity; an indistinct diffused medial line, oblique from costa to median nervure; postmedial line very indistinct, defined by greyish on outer side, double at costa, bent outwards below costa, then minutely dentate and produced to blackish and white points on the veins, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line very indistinct, whitish, defined on inner side by faint dentate brown marks except towards costa and with slight brown marks beyond it at middle, somewhat excurved below vein 7 and at middle; a terminal series of blackish points; cilia greyish with waved dark line near base. Hind wing whitish tinged with brown, the terminal area suffused with fuscous brown; cilia yellowish at base, with dark medial line and white tips; the underside white, the costal and terminal areas suffused with brown, a slight discoidal point and sinuous postmedial line.

Ab. 1. *lunulina*. Fore wing with black streak below base of cell and diffused black fascia between claviform and postmedial line.

Ab. 2. *oblonga*. Similar, but fore wing with the orbicular and reniform filled in with whitish.

Ab. 3. *variegata*. Thorax variegated with white; fore wing with whitish suffusion beyond the reniform and at apex, the black markings stronger, the lines defined by whitish, the stigmata with whitish annuli.—Armenia, W. Turkestan.

Hab. Britain, Stephens Coll. type, Leech Coll.; France; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland; S. Sweden; Russia, Livonia, Zeller Coll., Riga, Zeller Coll., St. Petersburg, Zeller Coll., Sarepta, Zeller Coll.; Asia Minor, Pontus; W. Turkestan, Turcomania, Ferghana, Saisan, Issyk Kul, Ala Tau; W. Siberia, Altai; Armenia; E. Turkestan, Ili; E. Siberia, Amurland. *Exp.* 46–54 millim.

Larva. Meyr. Brit. Lep. p. 133; Barrett, Lep. Brit. iv. p. 346, pl. 175. f. 1.

Pale pinkish ochreous; warts pale reddish brown; head and thoracic plate red-brown. Food-plants: *Poa maritima*, *P. distans*, and *P. borreri*. 4–6.

2984. Trachea geminimacula. (Plate CXIII. fig. 18.)

Hadena geminimacula, Dyar, Proc. Ent. Soc. Wash. vi. p. 103 (1904).

♂. Head, thorax, and abdomen dark brown mixed with grey; palpi blackish at sides; frons with slight lateral black bars; tegulæ with black medial line; tarsi blackish ringed with white. Fore wing brown irrorated with grey and black; subbasal line indistinct, double, waved, from costa to vein 1; antemedial line black defined by greyish on inner side, double at costa, oblique, waved, angled outwards above inner margin; claviform moderate, slightly defined by black scales; orbicular and reniform faintly defined by black scales, the former oblique elliptical, the latter with two prominent white points at lower extremity; a very indistinct diffused sinuous medial line; postmedial line very indistinct, faintly defined by greyish on outer side, double at costa, bent outwards below costa, then minutely dentate, with double series of black points with white points between them beyond it on the veins, excurved to vein 3, then bent inwards to lower angle of cell and oblique to inner margin, some whitish points beyond it on costa; subterminal line formed of slight dentate whitish marks with series of faint dentate blackish marks on its inner side, angled outwards at veins 7, 6, 4, 3, and slightly inwards at discal and submedian folds; a terminal series of slight dark lunules; cilia with a fine whitish line at base. Hind wing whitish, the veins and terminal half suffused with brown; cilia whitish, tinged with ochreous at base and with dark medial line; the underside whitish, the costal and terminal areas irrorated with brown, a blackish discoidal spot, sinuous postmedial line, and indistinct diffused subterminal band.

Hab. U.S.A., Colorado (*Cockerell*), 1 ♂, New Mexico. *Exp.* 46 millim.

2985. Trachea impulsa. (Plate CXIII. fig. 19.)

Mamestra impulsa, Guen. Noct. i. p. 194 (1852); Smith, Cat. Noct. N. Am. p. 136.
Hadena mixta, Grote, Bull. Geol. Geog. Surv. Terr. vi. p. 264 (1880).

Head and thorax purplish black with a few white scales; tarsi ringed with white; abdomen fuscous black, greyish at base. Fore wing purplish black irrorated with a few white scales; a slight black streak below base of cell; subbasal line represented by black striæ from costa and cell; antemedial line black, waved, oblique from costa to submedian fold; claviform small, defined by black; orbicular and reniform defined by black, the former rather oblique elliptical, the latter with minute white lunule at middle of outer edge with one or two points above and below it; a medial line oblique from costa to below cell, then approximated to postmedial line which is slightly bent outwards below costa, then dentate, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line represented by a series of small wedge-shaped black marks in the interspaces with white points on them; a terminal series of black points and a series of white points at base of cilia. Hind wing whitish tinged with brown, the veins and terminal half fuscous; cilia fuscous mixed with whitish; the underside whitish, the costal and terminal areas irrorated and suffused with fuscous, a discoidal lunule and sinuous postmedial line.

Ab. 1. *mixta*. Fore wing rather browner and more tinged with purple, the reniform with more white, the black marks of subterminal line conjoined, somewhat excurved below vein 7 and at middle.

Hab. Canada, Hudson's Bay (*Barnston*), 1 ♂, 1 ♀, Br. Columbia, Kaslo (*Cockle*,) 1 ♀, Revelstoke (*Mrs. Nicholl*), 1 ♀, Fraser R. (*St. John*), 1 ♂; U.S.A., Eastern and Middle States, New York, Trenton Falls (*Doubleday*), 1 ♂, 1 ♀ type, Evans Center (*Grote*), 1 ♂, 2 ♀, Schenectady (*Lintner*), 1 ♀, Texas, 1 ♂ type *mixta*, California (*Walsingham*), 1 ♂. *Exp.* 40–48 millim.

2986. Trachea brunnea. (Plate CXIII. fig. 20.)

Euplexia brunnea, Leech, Trans. Ent. Soc. 1900, p. 83.

♀. Head and tegulæ rufous mixed with brown; thorax brown slightly mixed with greyish; palpi blackish at sides; frons with lateral black bars; legs rufous and fuscous, the tarsi fuscous ringed with ochreous; abdomen brown mixed with rufous. Fore wing bright rufous, the costal area to subterminal line, the cell and area just below it on medial area, the medial part of inner area and the terminal area except towards apex suffused with brown; subbasal line represented by double black striæ from costa and some scales above vein 1; antemedial line double, oblique, waved; claviform small, brown defined by black; orbicular and reniform brown defined by black, the former round, the latter with white lunule

with some points below it on outer edge; a sinuous medial line oblique from costa to lower angle of cell; postmedial line indistinctly double, slightly bent outwards below costa, then minutely dentate and produced to dark streaks with whitish points on them on the veins, excurved to vein 4, then incurved, some whitish points beyond it on costa; subterminal line pale rufous slightly defined by red-brown on inner side, excurved below vein 7 and at middle; a terminal series of small black lunules; cilia fuscous with a greyish line at base. Hind wing pale yellowish tinged with brown, the veins dark; a dark discoidal lunule, curved postmedial line, diffused subterminal band, and fine terminal line; the underside yellow, the costal area irrorated with brown, a black discoidal spot, sinuous postmedial line, diffused subterminal band, and terminal series of points.

Hab. W. China, Pu-tsu-fang, 1 ♀ type. *Exp.* 38 millim.

2987. Trachea secalis.

Noctua secalis, Linn. Syst. Nat. ed. x. p. 519 (1758); Schiff. Wien. Verz. p. 78 (1776); Bjerkander, Vet.-Ak. Handl. xxxix. p. 290 (1778); Staud. Cat. Lep. pal. p. 175.
Noctua oculea, Linn. Faun. Suec. p. 321 (1761); Steph. Ill. Brit. Ent., Haust. iii. p. 9; Bell. Ann. Soc. Ent. Fr. 1858, p. 704, pl. 14. f. 3.
Noctua nictitans, Esp. Schmett. iv. pl. 126. f. 6 (1788), nec Linn.; Hübn. Eur. Schmett., Noct. ff. 97, 619, 620.
Noctua didyma, Esp. Schmett. iv. pl. 126. f. 7 (1788); Dup. Lép. Fr. vi. p. 443, pl. 100. ff. 5, 6; Frr. Neue Schmett. v. pl. 443. f. 2; Steph. Ill. Brit. Ent., Haust. iii. p. 8; Hmpsn. Moths Ind. ii. p. 210.
Noctua lamda, View. Tab. Verz. ii. p. 81 (1789).
Noctua leucostigma, Esp. Schmett. iv. pl. 159. f. 7 (1791).
Noctua lancea, Esp. Schmett. iv. pl. 174. f. 5 (1791).
Noctua secalina, Hübn. Eur. Schmett., Noct. f. 420 (1808).
Noctua rava, Haw. Lep. Brit. pp. 137, 209 (1809).
Noctua furca, Haw. Lep. Brit. p. 209 (1809); Steph. Ill. Brit. Ent., Haust. iii. p. 10.
Noctua I-niger, Haw. Lep. Brit. p. 211 (1809); Steph. Ill. Brit. Ent., Haust. iii. p. 10.
Noctua lugens, Haw. Lep. Brit. p. 212 (1809).
Parastichtis vilis, Hübn. Verz. p. 213 (1827).
Apamea moderata, Ev. Bull. Mosc. 1843, iii. p. 547, & 1856, iii. p. 56.
Hadena struvei, Ragusa, Nat. Sicil. iv. p. 274, pl. 4. f. 7 (1885).

Head and thorax red-brown; tegulæ with black medial line; patagia with some black scales on upper edge; tarsi fuscous with pale rings; abdomen grey-brown, the dorsal crests tipped with black and grey, the anal tuft and ventral surface tinged with rufous. Fore wing red-brown, the medial, and terminal area except at apex, tinged with purplish fuscous; subbasal line double, waved, from costa to submedian fold; a slight black streak above base of vein 1 and an oblique streak above inner margin before the antemedial line which is indistinctly double, waved, oblique from costa to median nervure; claviform small, defined by black and with black streak from its lower extremity to postmedial line; orbicular and reniform defined by

black, the former oblique elliptical, open above, the latter with its centre defined by fuscous on outer side and with white in centre and on outer edge; a diffused oblique medial dark striga from costa; postmedial line indistinct towards costa, slightly bent outwards below costa, then minutely waved, incurved below vein 5, some pale points beyond it on costa; subterminal line pale defined on inner side in places by brown, excurved below vein 7 and at middle; a terminal series of small black lunules; cilia with a brown line through them and brown tips. Hind wing reddish brown, the veins and terminal area rather darker; cilia with dark line through them and greyish tips; the underside greyish, the costal and terminal areas suffused with purplish red; a small discoidal spot, waved postmedial line from costa to vein 4, and diffused subterminal line.

Ab. 1. *nictitans*. Fore wing browner, the white marks on reniform slight.

Ab. 2. *leucostigma*. Fore wing with the black streaks on basal and medial areas absent, blacker, the white marks on reniform prominent; the thoracic tufts pale.

Ab. 3. Fore wing rufous, the costal area to subterminal line, the cell and area below it to submedian fold, and the terminal area except at apex suffused with fuscous.

Ab. 4. Fore wing similar but with the ground-colour brownish ochreous.

Ab. 5. *struvei*. Fore wing with the ante- and postmedial areas suffused with white.

Ab. 6. *moderata*. Similar but paler; fore wing with the postmedial line between veins 5 and 1 more oblique.—Urals, W. & E. Turkestan, Kashmir.

Hab. Britain, Leech Coll.; France, Sand Coll.; Denmark, Leech Coll.; Germany, Zeller and Frey Colls.; Austria; Hungary; Switzerland, Frey Coll.; Spain; Italy, Capri (*C. S. Browne*); Sicily; Scandinavia; Russia, Livonia, Zeller Coll., Sarepta, Leech Coll., Urals; Balkans; Turkey; Cyprus (*Miss Bate*), 1 ♂; Armenia; Asia Minor, Pontus, Bithynia, Taurus; W. Turkestan, Kirghistan, Ferghana, Issyk Kul, Ala Tau; E. Turkestan, Ili; Japan, Oiwake (*Pryer*), 1 ♀, Yokohama (*Jonas*), 1 ♂; W. China, Omei-shan, 1 ♀, Ta-chien-lu (*Pratt*), 1 ♂, 1 ♀; Kashmir, Dras (*Leech*), 1 ♂, Nubra (*McArthur*), 2 ♂, 1 ♀; Punjab, Dharmsála (*Hocking*), 4 ♂, 2 ♀. *Exp.* 30–36 millim.

Larva. Meyr. Brit. Lep. p. 135; Barrett, Lep. Brit. iv. p. 394, pl. 183.

Green; dorsal line irregular, double, dull purplish pink or deep reddish; head brownish. Food-plants, stems of Grasses. 9–5.

2988. Trachea chalcirena. (Plate CXIII. fig. 21.)

Celæna chalcirena, Püng. Iris, xv. p. 150, pl. v. f. 11 (1902).

♂. Head and thorax bright rufous; palpi, pectus, legs, and abdomen fuscous grey, the tarsi with pale rings. Fore wing bright rufous,

the terminal area fuscous brown, the veins greyish irrorated with fuscous, some fuscous irroration on middle of inner margin; subbasal line absent; antemedial line very indistinct, oblique from costa to vein 1, then bent inwards to inner margin; claviform absent; orbicular and reniform pure white, the former small, oblique elliptical, with rufous point in centre, the latter narrow and produced at lower extremity; postmedial line very indistinct, bent outwards below costa, excurved at vein 4, then strongly incurved, some white points beyond it on costa; subterminal line only defined by the contrast between postmedial and terminal areas, angled outwards at veins 7, 4, 3; cilia fuscous with a fine rufous line at base. Hind wing greyish uniformly suffused with brown; cilia greyish with a brown line through them; the underside grey thickly irrorated and suffused with brown.

Hab. W. Turkestan, Togus-Torau, 1 ♂ type. *Exp.* 32 millim.

2989. Trachea ascoldis.

Apamea askoldis, Oberth. Ét. Ent. v. p. 72, pl. 3. f. 13 (1880); Staud. Cat. Lep. pal. p. 175.
Apamea nivalis, Butl. Trans. Ent. Soc. 1881, p. 177.

Head rufous; thorax grey-white, the tegulæ edged with black; legs rufous, the tarsi black ringed with white; abdomen grey tinged with rufous. Fore wing red-brown, the basal and postmedial areas except towards costa and the inner medial area grey-white; subbasal line double, waved, from costa to submedian fold; antemedial line double, waved, oblique, indistinct towards inner margin; claviform short, defined by black except above; orbicular small, oblique elliptical, with greyish centre and pale annulus; reniform a white lunule defined by black on inner side; traces of a curved waved medial line; postmedial line double, indistinct, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some pale points beyond it on costa and an oblique black streak from it to termen in submedian fold: subterminal line white, very faintly defined by brown on inner side, excurved below vein 7 and at middle; terminal area blue-grey tinged with red-brown except at apex; a terminal series of black lunules; cilia red-brown with yellowish line at base. Hind wing grey tinged with brown, especially on terminal area; cilia white tinged with brown at tips; the underside white, the costal half tinged and irrorated with brown, a dark discoidal spot, sinuous postmedial line, and terminal series of black lunules.

Hab. E. Siberia, Ussuri; Japan, Tokio (*Maries*), 1 ♀ type *nivalis*, Yokohama (*Pryer*), 1 ♂, 2 ♀; W. China, Chang-Yang (*Pratt*), 1 ♂, Chia-kou-ho (*Pratt*), 1 ♀, Ta-chien-lu (*Pratt*), 1 ♀; Assam, Khásis, 1 ♂. *Exp.* 32–44 millim.

Sect. VI. Antennæ of male laminate.

A. Fore wing green mixed with red-brown ..... *polychroa.*
B. Fore wing not green.
a. Hind wing without discoidal lunule on upperside ..... *xylophila.*
b. Hind wing with large discoidal lunule on upperside ..... *lacruma.*

2990. Trachea polychroa, n. sp. (Plate CXIII. fig. 22.)

♂. Head and thorax sap-green mixed with ochreous brown and grey scales, the patagia with green patch with some black scales on upper edge and white scales towards extremity; pectus, legs, and abdomen ochreous irrorated with brown. Fore wing sap-green irrorated with red-brown, grey, and black scales, the medial area suffused with these colours except towards costa and inner margin, the subcostal and median nervures streaked with brown and grey on basal area; subbasal line represented by black striæ from costa and cell; antemedial line double, oblique, angled inwards on vein 1 and bent inwards to inner margin; claviform represented by a green mark defined by black below and at extremity, with another green mark beyond it; orbicular and reniform pale suffused with grey and brown and defined by blackish, both erect oblong; medial line oblique from costa to median nervure and angled inwards in submedian fold; postmedial line indistinctly double, strongly bent outwards below costa, then dentate, excurved to vein 4, then strongly incurved, some whitish points beyond it on costa and a black patch below vein 2; subterminal line defined by the area beyond it being suffused with dark brown, dentate, incurved at discal and submedian folds; a terminal series of small black lunules; cilia green mixed with blackish. Hind wing pale, uniformly suffused with brown; cilia greenish; the underside white tinged with pink and irrorated with brown, a black point in cell, discoidal spot and curved slightly crenulate postmedial line.

Hab. Chili, Mulchen (*Elwes*), 1 ♂ type. *Exp.* 34 millim.

2991. Trachea xylophila.

Hadena xylophila, Wlk. xv. 1725 (1858).
Perigea infelix, Druce, Biol. Centr.-Am., Het. i. p. 276 (nec Guen.).

♂. Head, tegulæ, and patagia deep red-brown; sides of palpi and frons blackish; tegulæ with diffused black line near tips; patagia with some black scales near upper edge; vertex of thorax greyish; tarsi black with pale rings; abdomen red-brown mixed with dark brown, the ventral surface pale except at extremity. Fore wing red-brown irrorated with blackish and suffused with dark brown to postmedial line, a semicircular black patch on costa before subterminal line; subbasal line represented by double black striæ from costa and a curved mark from cell; antemedial line indistinctly double, angled outwards below costa, then oblique, angled inwards on vein 1 and outwards above inner margin; claviform small, incompletely defined by black; orbicular hardly

traceable; reniform pale rufous with some black scales on edges, somewhat constricted at middle; medial line represented by double black striæ from costa and a faint waved line from cell to inner margin; postmedial line indistinctly double, slightly bent outwards below costa, then dentate and produced to short black streaks on the veins, excurved to vein 4, then strongly incurved; postmedial area with some rufous points on the black costal patch and small black spot in submedian fold; subterminal line very indistinct, defined on inner side by some black points and slight dentate dark marks and with slight dark streaks beyond it on the veins; a fine

Fig. 30.—*Trachea xylophila*, ♂. ½.

waved black terminal line with slight dentate marks in the interspaces; cilia with a slight pale line at base. Hind wing yellowish white, the terminal area red-brown, the inner margin brown with slight black marks towards tornus; the underside white, the costal and terminal areas irrorated with brown, a slight waved antemedial line from costa to discal fold, black lunule at upper angle of cell, irregularly crenulate postmedial line, and diffused waved subterminal line.

♀. Hind wing wholly suffused with brown.

Hab. Guatemala, Pantaleon (*Champion*), 1 ♂, Cero Zunil (*Champion*), 1 ♀; Panama, Chiriqui (*Champion*), 2 ♂, Godman-Salvin Coll.; Venezuela (*Dyson*), 1 ♀ type. *Exp.* 34–40 millim.

2992. **Trachea lacruma.** (Plate CXIII. fig. 23.)

Alibama lacruma, Schaus, Trans. Am. Ent. Soc. xxi. p. 229 (1894).

♂. Head and thorax red-brown largely mixed with black and a few white scales; palpi black at sides, grey in front; frons with lateral black bars; tegulæ with diffused black line near tips; patagia with black upper edge; pectus and legs rufous, the tarsi black ringed with rufous; abdomen rufous suffused with fuscous. Fore wing rufous almost wholly suffused with black-brown to postmedial line, the terminal area grey suffused with fuscous with a semicircular black patch on costa before subterminal line with black streak on its lower edge; subbasal line represented by double black striæ from costa and a slight striga from cell; antemedial line indistinctly double and irregularly waved, angled outwards below costa and above inner margin and inwards on vein 1; claviform faintly defined by diffused black; orbicular with slight

pale annulus defined by black, round; reniform pale rufous defined by black on inner side; postmedial line indistinctly double filled in with grey, bent outwards below costa, then dentate, strongly excurved to vein 4, then strongly incurved; postmedial area with some pale points on the black costal patch and a small black spot in submedian fold; subterminal line very indistinct, pale, defined on inner side by slight dark points and dentate marks and with small blackish spot beyond it in submedian fold, excurved below vein 7 and at middle; a slight waved black terminal line; cilia with a slight pale line at base. Hind wing white, the costal and terminal areas suffused with fuscous brown; a rather diffused dark discoidal lunule; inner margin brown with a blackish mark above tornus; cilia white at base, brown at tips, wholly white at submedian interspace; the underside white, the costal and terminal areas irrorated with brown, a dark waved antemedial line from costa to discal fold, black discoidal lunule, bisinuate postmedial line, and diffused subterminal line.

Hab. Brazil, São Paulo (*D. Jones*), 1 ♂, Castro Paraña, type † in Coll. Schaus; Argentina, Los Vasquez. *Exp.* 36 millim.

Genus **PARATRACHEA**, nov.

Type, *P. laches*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to vertex of head, the 3rd moderate or long and porrect; frons smooth; eyes large, rounded; antennæ ciliated; head and thorax clothed with hair and hair-like scales, the pro- and metathorax with divided crests; tibiæ fringed with hair; abdomen with dorsal series of crests and some rough hair at base. Fore wing rather narrow, the apex rounded, the termen crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the lines defined by green ..... *laches*.
B. Fore wing with the lines defined by silvery blue ..... *chalybeata*.

2993. Paratrachea laches.

Valeria laches, Druce, Biol. Centr.-Am., Het. i. p. 292, pl. 27. f. 20 (1889).

Head and thorax rufous with a slight purplish tinge; palpi brownish and ochreous; tibiæ and tarsi with brownish bands; abdomen ochreous suffused with rufous at extremity. Fore wing olive-yellow suffused in parts with rufous, the costa, veins, and terminal area purplish brown irrorated with grey; the basal area below cell dark brown and rufous; subbasal line represented by double striæ from costa and cell; a black spot defined on each side by olive-yellow on inner margin before the antemedial line which is double at costa, angled inwards in cell, outwards at vein 1, then strongly retracted to inner margin; claviform defined at extremity only by yellow and black; orbicular with yellow annulus and pale rufous centre defined by a hoop-shaped black line, open below; reniform with pinkish-grey centre defined on inner side by a black

line and yellow annulus, extending to below cell, angled inwards on median nervure and confluent with the orbicular, a black-brown patch in cell between them; medial line indistinct, oblique from costa to median nervure, then irregular; postmedial line indistinctly double filled in with yellow, bent outwards below costa, then sinuous, oblique below vein 4, angled inwards in submedian fold and bent outwards again, with a dark rufous patch beyond it on inner area and some pale points on costa; subterminal line with some dark scales, but chiefly defined by the contrast between the

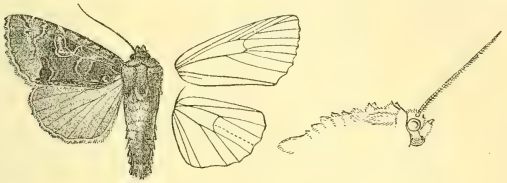


Fig. 31.—*Paratrachea laches*, ♂. ½.

olive and purplish areas, obliquely incurved, slightly excurved and waved below veins 7, 6: cilia olive-yellow, dark brown at tips except towards tornus. Hind wing pale yellowish suffused with red-brown except basal and costal areas; cilia yellow; the underside whitish suffused with brown and irrorated with pink, a slight discoidal spot and sinuous postmedial line.

Hab. Panama, Chiriqui (*Champion*), 1 ♀ type, Godman-Salvin Coll.; S.E. Peru, St. Domingo, 1 ♂, 1 ♀. *Exp.* 48 millim.

2994. **Paratrachea chalybeata.** (Plate CXIII. fig. 25.)

Nænia chalybeata, Moore, P. Z. S. 1867, p. 64; Hmpsn. Moths Ind. ii. p. 214.
Hadena spectabilis, Pouj. Bull. Soc. Ent. Fr. 1887, p. cx.

Head and thorax red-brown mixed with a few white hairs; tarsi ringed with white; abdomen red-brown, the ventral surface with a few white hairs, the anal tuft mixed with ochreous. Fore wing deep red-brown mixed with some pale rufous and irrorated with silvery purple scales especially on the veins; subbasal line silvery purple, waved, from costa to submedian fold; antemedial line silvery purple, oblique, angled inwards in cell, on vein 1, and to inner margin; claviform faintly defined by brown at extremity; orbicular and reniform defined by deep brown, open below and connected by a slight brown streak above median nervure, the former oblique elliptical, the latter large with flesh-coloured annulus; postmedial line double filled in with silvery purple and defined by pale rufous on outer side, bent outwards below costa, then minutely dentate and with white points beyond it on the veins, oblique below vein 4, some white points beyond it on costa; subterminal line

purplish grey, slightly waved, strongly dentate at veins 4, 3, 2; a series of purplish-grey lunules in interspaces of terminal area; cilia with a fine grey line at base. Hind wing reddish brown with a deep red-brown streak on vein 2, towards termen irrorated with a few grey scales; a grey subterminal line from vein 6 to termen at vein 1; cilia with fine whitish lines at base and near tips. Underside of both wings irrorated with purplish white especially beyond the curved subterminal line; hind wing with traces of discoidal spot and curved postmedial line.

One male and the female have the 3rd joint of palpi long and somewhat dilated at extremity, the other male has it short.

Hab. W. China, Moupin; Sikhim (*Russell*), 2 ♂, 1 ♀ type. *Exp.* 62 millim.

Genus ŒDIPLEXIA, nov.

Type, *Œ. mesophæa.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and fringed with hair in front, the 3rd short; frons with rounded prominence with slight ridge across it; eyes large, rounded; antennæ of male ciliated; thorax clothed with hair and scales, the pro- and metathorax with large spreading crests; tibiæ fringed with hair; abdomen with large dorsal crests on basal segments. Fore wing with the apex rounded, the termen evenly curved; veins 3 and 5 from near angle of cell; 6 from just below upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

2995. Œdiplexia mesophæa, n. sp.

♂. Head and thorax red-brown mixed with dark brown, the hairs tipped with grey; tarsi black ringed with ochreous; abdomen grey-brown, the dorsal crests reddish. Fore wing red-brown, the medial area suffused with dark brown except towards costa; subbasal line represented by blackish points below costa and cell;

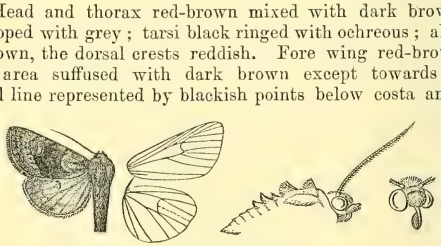


Fig. 32.—*Œdiplexia mesophæa*, ♂. ½.

antemedial line with black point at costa, slightly excurved, interrupted at the veins, with some dark suffusion before it on inner area; claviform small, defined by black; orbicular red-brown defined by black, touching a small spot defined by black below the cell; reniform ochreous suffused with rufous, defined by black on inner side only; traces of a curved black medial line; postmedial line with black point at costa, bent outwards below costa, then minutely waved, excurved to vein 4, then oblique, with black points beyond it on veins 4, 3; subterminal line indistinct,

ochreous, defined on each side by red-brown scales, minutely waved. Hind wing yellowish white, the costal and terminal areas irrorated with red-brown, a small discoidal lunule and slight curved postmedial line; the underside with the costal area strongly irrorated with red-brown, a discoidal spot, curved postmedial line, and diffused subterminal line.

Hab. Br. E. Africa, Kilima 'njaro (*Hannington*), 1 ♂ type. *Exp.* 34 millim.

Genus **EUPLEXIA.**

	Type.
Euplexia, Steph. Ill. Brit. Ent., Haust. iii. p. 3 (1829)	*lucipara.*
Karana, Moore, Lep. Atk. p. 106 (1882)	*decorata.*
Yula, Beth.-Baker, Nov. Zool. xiii. p. 193 (1906)	*novæguineæ.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately scaled, the 3rd short; frons smooth; eyes large, rounded; antennæ of male typically ciliated; head and thorax clothed chiefly with scales, the vertex of head with ridge of scales, the pro- and metathorax with spreading crests; abdomen with dorsal series of crests, the crest on 3rd segment large, and lateral tufts of hair on terminal segments. Fore wing with the apex rectangular, the termen slightly waved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of female bipectinate with moderate branches.

2996. **Euplexia catephiodes**, n. sp.

♀. Head and thorax black-brown slightly tinged with rufous and mixed with a few grey hairs; tarsi ringed with white; abdomen fuscous brown tinged with grey. Fore wing black-brown tinged with grey and mixed with some rufous; subbasal line represented by slight black points below costa and cell; antemedial line indistinctly double, interrupted, black filled in with rufous, incurved in cell and angled inwards on vein 1, the claviform

Fig. 33.—*Euplexia catephiodes*, ♀. ½.

represented by a small black mark on its outer edge; orbicular and reniform defined by black, the former small, round, the latter constricted at middle; medial line diffused, blackish, oblique from costa to reniform and from lower angle of cell to inner margin; postmedial line black, double, the outer line indistinct and defined by rufous on outer side, slightly bent outwards below costa, incurved at discal fold and oblique below vein 4; subterminal line

represented by a series of small dentate black marks on blackish suffusion and with short black streaks above and below vein 4; a terminal series of small black lunules. Hind wing black-brown with large white patch on basal area from subcostal nervure to vein 1; a slight black terminal line from apex to vein 2 with slight white line before it; cilia chequered white and brown from apex to vein 4; the underside tinged with grey, the white patch extending to inner margin, a small discoidal spot connected with the dark costal area.

Hab. Transvaal, White R. (*Cooke*), 1 ♀ type. *Exp.* 42 millim.

Sect. II. Antennæ of male bipectinate with moderate branches, the apex simple.

A. Fore wing with the antemedial band strongly angled outwards below median nervure ..... *sinuata.*
B. Fore wing with the antemedial band not angled outwards below median nervure ..... *pectinata.*

2997. Euplexia sinuata.

Euplexia sinuata, Moore, Lep. Atk. p. 125, pl. 4. f. 25 (1882); Hmpsn. Moths Ind. ii. p. 217.

♂. Head and thorax purplish black; antennæ with tufts of white hair from basal joint; tarsi ringed with white; abdomen fuscous, whitish at base. Fore wing purplish fuscous, the basal area with some rufous below the cell; subbasal line represented by a whitish striga from costa and a hoop-shaped mark on a black patch below cell confluent with another black mark on inner margin; a white antemedial band tinged with brown towards costa, strongly angled outwards below cell and above inner margin, and inwards on vein 1; orbicular quadrate, purplish fuscous defined slightly by white at sides only and with black in cell before it and between it and reniform, which is fuscous defined by whitish and with some whitish in centre, angled inwards on median nervure to the orbicular; the medial area below the cell black, rufous at inner margin; the postmedial area whitish tinged with rufous and pale brown; the postmedial line obsolescent and defined by white on outer side, obliquely bent outwards from below costa to vein 6, below vein 5 incurved to lower angle of cell, then oblique, slightly angled outwards at vein 2 and to inner margin, the costa beyond it black with white points; subterminal line indistinct, pale, slightly waved, defined on inner side by black from below costa to submedian fold, the area beyond it purplish fuscous to vein 4, then greyish; cilia black with brownish line at base. Hind wing whitish tinged with fuscous, the costal and terminal areas broadly suffused with fuscous; indistinct postmedial and subterminal lines defined by whitish on outer side below vein 3 and with some blackish before them at vein 2; cilia blackish with a fine white line at base, pale towards tornus; the underside white, the costal and terminal areas irrorated with fuscous, a small discoidal lunule and diffused postmedial and subterminal lines.

Hab. Sikhim (*Möller*), 2 ♂. *Exp.* 34 millim.

2998. Euplexia pectinata.

Euplexia pectinata, Warr. P. Z. S. 1888, p. 308; Hmpsn. Ill. Het. B. M. viii. p. 14, pl. 143. f. 4; id. Moths Ind. ii. p. 222.

Head and thorax fuscous black mixed with a few white scales, the metathoracic crest tipped with white; antennæ with the basal joint white, the shaft ringed with white; tarsi ringed with white; abdomen fuscous mixed with white, the crests tipped with white. Fore wing fuscous black, the basal area with some rufous in and below cell; subbasal line white defined on each side by black, angled outwards in cell, with dentate black mark beyond it above vein 1 and another below it above inner margin; a pure white antemedial band, nearly straight from costa to below cell, strongly angled inwards on vein 1 and outwards above inner margin; medial

Fig. 34.—*Euplexia pectinata*, ♂. ½.

area black, fuscous at costa and red-brown at inner margin; orbicular rather V-shaped open above and below, fuscous defined by white lines at sides; postmedial area white slightly tinged with grey and rufous, the reniform placed on it, white slightly defined by rufous and with some rufous in upper part, narrow and angled inwards on median nervure to near orbicular; postmedial line very indistinct, bent outwards below costa, excurved to vein 4, then incurved to lower edge of reniform and slightly bent outwards to inner margin, some white points and dark streaks beyond it on costa; subterminal line fine, white defined by black on inner side except towards costa and inner margin, crenulate between veins 4 and 1, some greyish beyond it towards tornus; cilia brown and fuscous with slight grey line at base and white tips. Hind wing whitish, the costal and terminal areas broadly suffused with fuscous in male, in female wholly suffused with fuscous; a faint waved whitish postmedial line with blackish spot before it at vein 2; a slight whitish line just before termen from vein 4 to tornus with slight black marks at veins 3, 2; cilia with fine pale line at base and white tips; the underside white irrorated with brown, the costal area brown irrorated with white, a discoidal lunule and postmedial line excurved below costa.

Hab. Punjab: Kulu, Sultanpur (*G. Young*), 1 ♀, Dalhousie (*Harford*), 1 ♀, Dharmsála (*Hocking*), 1 ♂, 5 ♀, Thundiani (*Yerbury*), 3 ♂, 3 ♀ type, Umballa (*Reed*), 1 ♀; Madras, Nilgiris (*Swinhoe*), 1 ♀. *Exp.* 36–40 millim.

SECT. III. Antennæ of male ciliated.

A. Fore wing ochreous white with the terminal area leaden grey ..... *plumbeomarginata.*

B. Fore wing not ochreous white with the terminal area leaden grey.

a. Fore wing with white band before the antemedial line.

a^1. Fore wing with the antemedial white band angled inwards in submedian fold.

a^2. Fore wing with the antemedial white band reaching the costa ..... *illustrata.*

b^2. Fore wing with the antemedial white band not reaching the costa.

a^3. Fore wing without purplish band from costa beyond the reniform ..... *albovittata.*

b^3. Fore wing with purplish band from costa beyond the reniform ..... *fasciata.*

b^1. Fore wing with the antemedial white band not angled inwards in submedian fold .....

a^2. Fore wing suffused with silvery metallic green and golden bronze.

a^3. Fore wing with two black points on the white reniform.

a^4. Hind wing wholly suffused with fuscous brown.

a^5. Fore wing with the subbasal line strongly angled outwards below median nervure ..... *lætevirens.*

b^5. Fore wing with the subbasal line not angled outwards below median nervure ..... *decorata.*

b^4. Hind wing white, the terminal area suffused with brown ..... *gemmifera.*

b^3. Fore wing without black points on the white reniform ..... *novæguineæ.*

b^2. Fore wing not suffused with silvery metallic green and golden bronze.

a^3. Fore wing with the claviform with white annulus defined by black ..... *calamistrata.*

b^3. Fore wing with the claviform represented by a black point.

a^4. Fore wing with the postmedial area bright rufous ..... *chlorerythra.*

b^4. Fore wing with the postmedial area concolorous, a rufous patch at tornus . *picturata.*

b. Fore wing without white band before the antemedial line.

a^1. Fore wing without black streaks beyond the postmedial line above and below vein 2.

a^2. Fore wing with pale patch on reniform.

a^3. Fore wing with the inner margin pale green on medial area.

a^4. Fore wing with oblique brown line between veins 7 and 4 beyond the postmedial line which is excurved well beyond reniform ..... *discisignata.*

b^4. Fore wing without oblique brown line between veins 7 and 4 beyond the postmedial line which is closely approximated to the reniform ..... *striatovirens.*

b^3. Fore wing with the inner margin not green on medial area.
a^4. Fore wing with the postmedial area paler than the terminal area.
a^5. Fore wing with the ante- and postmedial lines anastomosing above inner margin.
a^6. Fore wing with the reniform narrow and oblique ..... *rhoda.*
b^6. Fore wing with the reniform lunulate. *amaranta.*
b^5. Fore wing with the ante- and postmedial lines not anastomosing above inner margin.
a^6. Fore wing with the orbicular and reniform confluent on median nervure... *chalybsa.*
b^6. Fore wing with the orbicular and reniform not confluent on median nervure.
a^7. Fore wing with the postmedial line formed by three ochreous lines ... *plumbeola.*
b^7. Fore wing with the postmedial line not formed by three ochreous lines.
a^8. Fore wing with the postmedial area greyish or purplish without rufous tinge.
a^9. Fore wing with the postmedial line not angled outwards at vein 2.
a^{10}. Fore wing with more or less brown on lower part of reniform ..... *saldanha.*
b^{10}. Fore wing with the lower part of reniform wholly white ..... *albonota.*
b^9. Fore wing with the postmedial line angled outwards at vein 2..... *poliochroa.*
b^8. Fore wing with the postmedial area white slightly tinged with rufous. *augens.*
c^8. Fore wing with the postmedial area strongly suffused with rufous.
a^9. Fore wing with pale patch on postmedial costal area including the reniform.. ..... *debilis.*
b^9. Fore wing with pale patches beyond postmedial line on costal area and in submedian interspace..... *triplaga.*
c^9. Fore wing with the postmedial area uniform in colour.
a^{10}. Fore wing with the orbicular blue-black and confluent with a blue-black spot below the cell . *melanocycla.*
b^{10}. Fore wing with the orbicular not confluent with a blue-black spot below the cell.
a^{11}. Fore wing with the ante- and postmedial lines more or less approximated at inner margin.
a^{12}. Hind wing with the basal area whitish ..... *lucipara.*
b^{12}. Hind wing wholly suffused with brown ..... *semifascia.*
b^{11}. Fore wing with the ante- and postmedial lines widely separated at inner margin..... *azyga.*

b^4. Fore wing with the postmedial and terminal areas concolorous.
a^5. Fore wing black with white points at base of cilia ..... *melanistis.*
b^5. Fore wing purple-grey with yellow points at base of cilia ..... *aureopuncta.*
b^2. Fore wing without pale patch on reniform.
a^3. Fore wing with small white lunule on outer edge of reniform.
a^4. Fore wing red-brown largely mixed with grey ..... *magniclavis.*
b^4. Fore wing dark brown with a purplish-grey gloss.
a^5. Fore wing with the orbicular round . *prolifera.*
b^5. Fore wing with the orbicular oblique elliptical.
a^6. Fore wing with the orbicular and reniform not connected by a fascia on median nervure ..... *metallica.*
b^6. Fore wing with the orbicular and reniform connected by a fascia on median nervure ..... *harfordi.*
b^3. Fore wing without white lunule on outer edge of reniform.
a^4. Fore wing with the reniform defined at sides by rufous and connected with orbicular by a fascia on median nervure. *erythriris.*
b^4. Fore wing with the reniform V-shaped, defined at sides by white ..... *adamantina.*
c^4. Fore wing with the reniform lunulate.
a^5. Fore wing with large wedge-shaped black mark above basal part of inner margin ..... *signata.*
b^5. Fore wing without wedge-shaped black mark above base of inner margin ... *polycmeta.*
d^4. Fore wing with the reniform narrow and constricted at middle ..... *callisina.*
b^1. Fore wing with black streaks beyond postmedial line above and below vein 2 ..... *leucostigma.*

2999. **Euplexia plumbeomarginata.** (Plate CXIII. fig. 28.)

Euplexia plumbeomarginata, Hmpsn. Trans. Ent. Soc. 1895, p. 298; id. Moths Ind. iv. p. 509.

♂. Head white; palpi and frons black; antennæ black ringed with white; tegulæ white at base, black at tips; patagia leaden grey; thorax dorsally white, the metathoracic crests tipped with black; pectus leaden grey; legs black, the tibiæ and tarsi ringed with white; abdomen fuscous black slightly irrorated with white, the base ochreous white. Fore wing ochreous white slightly irrorated with black; subbasal line represented by a small triangular black mark on costa and point below cell; the antemedial area with two black points on costa, two on inner margin and one in cell and on vein 1; the antemedial line oblique, sinuous, black, joining the postmedial line at vein 1; the medial area with the costa, cell and area below it black to end of cell, tinged with rufous beyond the cell; orbicular ochreous white, quadrate, confluent with a patch on costa and semicircular mark below

the cell; reniform narrow, fuscous defined by reddish ochreous on inner side, its lower extremity touching the mark below cell; post-medial line very indistinct, double, represented by black scales, bent outwards below costa, then oblique sinuous, some black points beyond it on costa; subterminal line black, oblique from costa to vein 7, incurved at discal fold, angled outwards at veins 4, 3, inwards at vein 2, and bent outwards to tornus; terminal area leaden grey, black at tornus and with pinkish patch at apex; a fine white line at base of cilia. Hind wing fuscous black rather paler at base; cilia black at base, chequered black and white at tips; the underside ochreous white thickly irrorated with black, a discoidal spot and sinuous postmedial line.

Hab. Burma, N. Chin Hills, 5,900′ (*Watson*), 1 ♂ type. *Exp.* 32 millim.

3000. **Euplexia illustrata.** (Plate CXIII. fig. 29.)

Euplexia illustrata, Græs. Berl. Ent. Zeit. 1888, p. 339; Staud. Cat. Lep. pal. p. 185.

Head and thorax black with a few white scales; palpi with the extremity of 2nd joint white; antennæ with the tufts on basal joint white; metathorax with the crests tipped with pink or white; tarsi ringed with white; abdomen black-brown, whitish at base. Fore wing with the basal area black at costa and inner margin, red-brown at middle; subbasal line represented by white bars from costa and cell, the latter defining above and on inner side a black spot above vein 1 with another below it on inner margin; a white antemedial band, erect from costa to below cell, then angled inwards on vein 1 and excurved above inner margin; the medial area purplish fuscous towards costa, black below cell and red-brown at inner margin; the claviform absent; orbicular quadrate, purplish fuscous defined by white striæ at sides and with black in cell before it and between it and the reniform, which is white with the upper part of centre defined by fuscous, emitting a white streak on median nervure to the orbicular, a red-brown band beyond it from costa to vein 4; postmedial area white, the postmedial line very indistinct, double, formed of black scales, bent outwards below costa, then minutely waved, incurved below vein 5, the costa beyond it brown with white points; subterminal line slight, white defined on inner side by a black band from below costa to vein 2, divided into spots by slight white streaks on veins 8, 7, the area beyond it purplish fuscous to vein 4, then brownish; cilia black with brownish white points at base, the tips chequered black and white. Hind wing fuscous black, the interspaces of basal half whitish, especially in male; traces of a waved postmedial line defined by whitish on outer side and with three white marks beyond it on vein 2 with black marks between them; a white patch on termen from above vein 2 to vein 1; cilia with white points at base, the tips chequered white and black to vein 2, then wholly white; the underside white, the costal area black-brown irrorated

with white, a black discoidal spot and diffused postmedial and subterminal bands.

Hab. E. Siberia, Ussuri; Japan, Hakodaté (*Andrews*), 1 ♀, Yokohama (*Lewis, Pryer*), 1 ♂, 1 ♀; Corea, Gensan (*Leech*), 1 ♂; W. China, Wa-ssu-kou, 1 ♀, Pu-tsu-fang, 1 ♂. *Exp.* 40–48 millim.

3001. Euplexia albovittata.

Euplexia albovittata, Moore, P. Z. S. 1867, p. 57, pl. 6. f. 16; Hmpsn. Moths Ind. ii. p. 217.

Head and thorax bluish black with a few white scales; palpi white at tips; antennæ ringed with white and with the tufts of hair from basal joint white; pro- and metathoracic crests tipped with white; tibiæ and tarsi ringed with black; abdomen fuscous, whitish at base, the crests tipped with white. Fore wing purplish fuscous slightly irrorated with white; subbasal line represented by a small white spot on median nervure with some rufous beyond it; a white antemedial band from below costa to inner margin, bent inwards below cell and excurved above inner margin; the medial area black below the cell and rufous towards inner margin; the orbicular quadrate, fuscous slightly defined by white at sides only, and with black before and beyond it in cell; the reniform placed on the white postmedial area, white with its centre slightly defined by fuscous, its outer edge by rufous suffusion at median nervure, emitting a slight white streak to orbicular; the postmedial area slightly irrorated with brown; the postmedial line very indistinct, double, strongly bent outwards below costa, then minutely waved, incurved below vein 4, the costa beyond it black with white points; subterminal line blackish, oblique, the area beyond it purplish fuscous, obsolete below submedian fold, white points beyond it below veins 4 and 3 with brownish white beyond them; cilia black with a fine whitish line at base. Hind wing fuscous black, the cell and interspaces below it whitish especially in male; vein 2 with three white spots towards termen with blackish streak before them; cilia black towards apex, chequered white and black at middle and white towards tornus; the underside with the costal and terminal areas black-brown irrorated with white, a slight discoidal lunule.

Hab. W. China, Chia-kou-ho (*Pratt*), 1 ♀, Wa-shan (*Pratt*), 1 ♀, Ta-chien-lu (*Pratt*), 1 ♀; Sikhim (*Lidderdale, Möller*), 5 ♂, 4 ♀, type. *Exp.* 42–44 millim.

3002. Euplexia fasciata.

Euplexia fasciata, Hmpsn. Ill. Het. B. M. viii. p. 77, pl. 145. f. 20 (1891); id. Moths Ind. ii. p. 222.

♀. Head and thorax black mixed with some white; antennæ ringed with white and with tufts of white hair from basal joint; tibiæ and tarsi ringed with white; abdomen fuscous, the ventral

surface black irrorated with white. Fore wing purplish fuscous; some pinkish at base and below costa near base; a black spot above vein 1 before the antemedial band defined on inner side by a white striga representing the subbasal line, and above by a white fascia connected with the white antemedial band from subcostal nervure to inner margin, angled outwards on median nervure and above inner margin; orbicular quadrate, fuscous defined by white at sides only and with black before and beyond it in cell; reniform white with slight fuscous spot in upper part, confluent below with the white postmedial area, and emitting a slight white streak on median nervure to the orbicular; the medial area black below the cell and pale reddish at inner margin; a purplish fuscous band beyond the reniform, the area beyond it white to the subterminal line, below vein 4 bent inwards to lower edge of reniform; postmedial line very indistinct, formed of black scales, bent outwards below costa, then double, minutely waved, below vein 4 bent inwards to lower angle of cell, then oblique, the costa beyond it black with some white points; subterminal line slight, white defined on inner side by black between veins 7 and 2, waved, more strongly below vein 4, the area beyond it purplish fuscous on apical half, pale brownish on inner half; a terminal series of slight black lunules; cilia white at base, black at tips. Hind wing fuscous black, some whitish at base, a small postmedial white spot on vein 2 with some black on each side of it and a wedge-shaped white patch on termen from above vein 2 to vein 1; cilia white at base, black at tips; the underside black-brown irrorated with white, some white below cell, a white discoidal spot and traces of diffused black postmedial and subterminal lines.

Hab. Madras, Nilgiris (*Hampson*), 1 ♀ type. *Exp.* 42 millim.

3003. Euplexia lætevirens.

Diphtera lætevirens, Oberth. Ét. Ent. x. p. 17, pl. ii. f. 6 (1884); Staud. Cat. Lep. pal. p. 185.

Head and thorax dark brown mixed with white; patagia with golden green patches; tarsi ringed with white; abdomen brown mixed with white. Fore wing dark brown with patches of golden green in the interspaces, the veins with slight whitish streaks; subbasal line white, angled outwards below cell to, or nearly to, antemedial band and ending at vein 1; antemedial band white, nearly straight from costa to above inner margin, then bent inwards, emitting a white streak on inner side in submedian fold; claviform represented by a white lunule; orbicular a small round white spot; reniform white with two small dark spots in upper part, its lower edge excised; faint traces of a medial line oblique from costa to lower angle of cell, then inwardly oblique; postmedial line indistinct, slightly defined by whitish on outer side, strongly bent outwards below costa, then dentate, oblique below vein 4, some white points beyond it on costa; subterminal line represented

by a series of slight whitish striæ with indistinct dentate blackish spots on their inner side; a terminal series of small blackish spots. Hind wing whitish wholly suffused with fuscous brown, an indistinct sinuous postmedial line; cilia whitish; the underside white irrorated with brown, the costal area suffused with brown, a dark discoidal spot and diffused sinuous postmedial line.

Hab. E. Sibera, Ussuri; Japan, Yokohama (*Pryer*), 2 ♂, 1 ♀. *Exp.* 38–44 millim.

3004. Euplexia decorata. (Plate CXIII. fig. 30.)

Karana decorata, Moore, Lep. Atk. p. 107 (1882); Hmpsn. Moths Ind. ii. p. 217.

Head white mixed with black; palpi black with some white in front and at tips; antennæ black; thorax black-brown mixed with red-brown and white, the patagia with curved golden-green marks; pectus and legs black-brown irrorated with white, the tibia with some rufous hair above, the tarsi ringed with white; abdomen black-brown irrorated with white, the crests red-brown. Fore wing black irrorated with white and with patches and streaks of golden green, the veins purplish grey, the medial area with reddish streaks below subcostal nervure and vein 7, on median nervure and between veins 2 and 4 and above vein 1; a silvery white subbasal band from costa to vein 1 expanding into slight streaks in and below cell; a white antemedial band nearly straight from costa to above inner margin, then bent inwards, emitting a rather oblique streak on inner side above vein 1; claviform represented by a white lunule on a black patch; orbicular a small round white spot defined by black; reniform white with two small black spots in its upper part, its brown edge excised, a white spot above it on costa; an indistinct medial line oblique from costa to lower angle of cell, then inwardly oblique; postmedial line indistinct, strongly bent outwards below costa, then dentate, incurved below vein 7 and oblique below vein 4, some white points beyond it on costa; subterminal line very indistinct, formed of yellowish-white striæ and small spots below veins 7 and 5 with obscure blackish spots on their inner side; a terminal series of small black spots; cilia black and white with fine white line at base. Hind wing black-brown with indistinct sinuous postmedial line, some white on termen below vein 2; cilia brown and white with white patch at submedian interspace; the underside black-brown thickly irrorated with white, the inner area slightly whitish, a black discoidal spot defined by white, diffused crenulate postmedial line, and traces of subterminal line.

Hab. Sikhim (*Atkinson*, *Möller*), 2 ♂, 1 ♀ type. *Exp.* 40–46 millim.

3005. Euplexia gemmifera.

Plusia gemmifera, Wlk. xii. 934 (1857); Hmpsn. Moths Ind. ii. p. 217; Staud. Cat Lep. pal. p. 185.
Karana similis, Moore, P. Z. S. 1888, p. 407; Butl. Ill. Het. B. M. vii. p. 60, pl. 128, f. 8.

Head white mixed with black; palpi black, white at tips; sides of frons black; thorax black-brown mixed with white; patagia with golden-green patches; pectus and legs black-brown mixed with white, the tarsi ringed with white; abdomen fuscous mixed with grey. Fore wing deep purplish grey irrorated with black and with patches and streaks of golden green in the interspaces; subbasal band silvery white, slightly sinuous, ending at vein 1; antemedial band white, nearly straight from costa to above inner margin, then bent inwards, emitting a white streak on inner side in submedian fold; claviform represented by a white lunule; orbicular a small round white spot defined by black; reniform white with two small black spots in upper part, its lower edge excised; an indistinct medial line oblique from costa to lower angle of cell, then inwardly oblique; postmedial line blackish defined on each side by silvery grey and by white towards costa, strongly bent outwards below costa, then minutely dentate, oblique below vein 4, some white points beyond it on costa; subterminal line represented by a series of small golden-green spots with slight dentate black marks on their inner sides; a terminal series of small black lunules. Hind wing white, the costal and terminal areas suffused with fuscous brown, in female the inner area tinged with brown; a slight sinuous postmedial line; cilia white mixed with brown; the underside white, the costal and terminal areas irrorated with black, blackish patches on costal area at middle and apex, a discoidal point and crenulate postmedial line incurved below vein 4.

Hab. Punjab, Murree (*Harford*), 1 ♂, 2 ♀, Dalhousie (*Harford*), 2 ♀, Dharmsála (*Hocking*), 5 ♀, type *similis*; Bombay, Poona; Madras, Nilgiris (*Swinhoe*), 1 ♀; hab. ign. 1 ♂ type. *Exp.* 38–40 millim.

3006. *Euplexia novæguineæ. (Plate CXIII. fig. 31.)

Yula novæguineæ, Beth.-Baker, Nov. Zool. xiii. p. 193 (1906).

♂. Head and thorax white with silver and golden reflections; palpi deep red-brown with white points at extremities of joints; frons red-brown with some white scales; antennæ black; patagia with deep red-brown patches at base and near tips; crests red-brown; pectus and legs dark red-brown, the tibiæ and tarsi banded with white; abdomen yellowish white suffused with rufous, the ventral surface black-brown except at extremity. Fore wing deep red-brown with gold and silver reflections; a tuft of reddish-yellow scales at base; a silvery white subbasal band with sinuous black

line on it from costa to submedian fold; antemedial line double, black filled in with silvery white and with triangular silver patch before it below the cell, angled outwards below costa, then slightly sinuous; claviform large, silver defined by black and with small silver spot beyond it; orbicular a small elliptical silver spot defined by black; reniform anvil-shaped, silver defined by black; postmedial line double, black filled in with silver, bent outwards below costa, then minutely waved, incurved below vein 4, some white points beyond it on costa: subterminal line only defined by the area beyond it being silver except at apex, with golden-brown patches at discal fold and above tornus, incurved at discal fold and below vein 2; a terminal series of red-brown striæ; cilia white mixed with rufous and with waved red-brown line through them. Hind wing pale red-brown, whitish at base; cilia white at tips; the underside white, the costal and terminal areas suffused with red-brown, the former irrorated with white, a medial red-brown bar from costa, discoidal spot, waved sinuous postmedial line, and terminal series of striæ with small white spots before them.

Hab. Br. N. Guinea, Ekeikei (*Pratt*), type† ♂, in Coll. Bethune-Baker, Dinawa, Kebea Mts. *Exp.* 32 millim.

3007. Euplexia calamistrata.

Dianthœcia calamistrata, Moore, Lep. Atk. p. 124, pl. iv. f. 123 (1882); Hmpsn. Moths Ind. ii. p. 216.

Head and thorax ochreous white mixed with some rufous and black scales; palpi blackish at sides; frons with lateral black bars; antennæ ringed black and white; pectus black in front; tibiæ and tarsi banded with blackish; abdomen ochreous irrorated with fuscous, whitish at base, the dorsal crests tipped with black. Fore wing olive-ochreous slightly tinged in parts with fuscous; subbasal line black defined by white on outer side, double at costa, waved, from costa to vein 1, with a black streak defined by white above beyond it in submedian fold to the curved white antemedial band defined on outer side by a few black scales and by two black striæ at costa; claviform with olive and black centre and white annulus defined by black at extremity; orbicular and reniform with pale olive centres and some black in lower portions and white annuli defined by black at sides only in former, at sides and below in latter, both rather oblique elliptical; a medial black spot on costa; postmedial line marked by double black spots at costa, then slight, black defined by whitish on outer side, bent outwards below costa, oblique below vein 6, incurved at submedian interspace and bent outwards to inner margin, the costa beyond it blackish with white points; subterminal line white defined on inner side by blackish at costa and by small dentate black marks at middle, and on outer side by black from vein 6 to inner margin forming streaks on the veins, slightly angled outwards at vein 7 and bent outwards to tornus; a fine crenulate terminal line; cilia ochreous mixed

with black. Hind wing pale ochreous suffused with fuscous; traces of a pale subterminal line; cilia pale at base, fuscous at tips; the underside ochreous white, the costal area irrorated with black, a black discoidal spot, sinuous postmedial line, and diffused subterminal band.

Hab. Sikhim (*Möller*, *Dudgeon*, *Pilcher*), 2 ♂, 1 ♀. *Exp.* 36–38 millim.

3008. Euplexia chlorerythra.

Euplexia chlorerythra, Swinh. Trans. Ent. Soc. 1895, p. 41, pl. 1. f. 6; Hmpsn. Moths Ind. iv. p. 509.

♂. Head and thorax white faintly tinged with green, the back of head and tegulæ with some ochreous and black scales, the metathoracic crest tipped with black; palpi black, the tips of 2nd and 3rd joints white; frons black at sides; pectus ochreous, black in front; tibiæ and tarsi banded with black; abdomen ochreous white suffused and irrorated with black, the base and anal tuft pale. Fore wing ochreous white with purplish-red suffusion before the antemedial line and on postmedial area, the medial area tinged with green; subbasal line represented by black points below costa and cell; a diffused black and white streak in submedian fold to the antemedial line, which is white, excurved from costa to submedian fold, then incurved, with black striga beyond it on costa and minute black streak in submedian fold, representing the claviform; orbicular white defined by black at sides, oblique elliptical; reniform white defined by black on inner side and below; a diffused blackish medial shade; postmedial part of costa with series of black and white points; postmedial line black defined by white on outer side, slightly excurved from costa to vein 4, strongly angled inwards in submedian fold; subterminal line ochreous defined by dark brown on outer side, obsolete towards costa, then minutely dentate with series of points beyond it in the interspaces and streaks on the veins except towards costa; cilia dark brown mixed with ochreous. Hind wing ochreous white wholly suffused with fuscous, traces of sinuous postmedial and subterminal lines; cilia white at base, blackish at tips; the underside ochreous white irrorated with black, the costal area suffused with black, a discoidal spot, curved postmedial line, and diffused subterminal band.

Hab. Assam, Khásis, 1 ♂ type. *Exp.* 36 millim.

3009. Euplexia picturata. (Plate CXIII. fig. 32.)

Agrotis picturata, Leech, Trans. Ent. Soc. 1900, p. 33.

♂. Head, thorax, and abdomen white, tinged with yellow and rufous; palpi black except at tips; antennæ blackish; tibiæ and tarsi banded with black; abdomen with the dorsal crests tipped with blackish. Fore wing pale ochreous yellow; subbasal line represented by some black scales from costa to submedian fold;

the antemedial area with a rufous band becoming black at costa and defined on each side by white; a slight blackish antemedial line, incurved from below costa to below cell, then excurved; claviform represented by a dark point at its extremity; orbicular white with rufous centre, oblique elliptical; reniform white with some rufous on inner edge, rather oblong; a black patch between the stigmata; a medial black patch on costa and indistinct oblique line from cell to inner margin; postmedial line represented by a black spot on costa, bent outwards below costa, then minutely waved and interrupted, excurved to vein 4, then incurved, the costa beyond it black with white points; subterminal line with triangular blackish patch on costa, then rufous defined by white on inner side, excurved to vein 3, then incurved, the area beyond it whitish suffused with rufous at middle and towards tornus and with blackish streaks on veins 5 and 2; a series of black points just before termen; cilia ochreous tinged with rufous and chequered with brown. Hind wing ochreous white slightly tinged with fuscous except on inner and terminal areas; a discoidal point, curved postmedial line, diffused subterminal band and series of points and striæ just before termen; cilia ochreous with some fuscous and rufous at middle and white tips; the underside with the costal area irrorated with black, a discoidal spot, curved postmedial line, and diffused subterminal band from costa to vein 4.

Hab. W. China, Chia-kou-ho (*Pratt*), 3 ♂ type, Huang-mu-chang (*Pratt*), 1 ♂. *Exp.* 30–34 millim.

3010. Euplexia discisignata.

Euplexia discisignata, Moore, P. Z. S. 1867, p. 57, pl. 6. f. 9; Hmpsn. Moths Ind. ii. p. 213.

Head and thorax purplish fuscous with a few whitish scales; metathoracic crest whitish; tibiæ ringed with whitish; abdomen dark brown, whitish at base, the crests tipped with white, the anal tuft mixed with whitish. Fore wing purple-brown; the basal area with pale striæ, the inner medial area and postmedial area from below costa to vein 4 olive-yellow; subbasal line black, waved, from costa to submedian fold, with some olive-yellow on each side of it below cell; antemedial line slight, black defined by pinkish on inner side except towards inner margin, angled outwards below costa, then oblique; the medial area black before and between the stigmata and below cell to submedian fold; claviform brown, undefined; orbicular purplish fuscous defined by pinkish at sides, rather U-shaped and open above, extending to below cell; reniform white, undefined on upper and outer sides, its centre defined by black and brown points, rather oblique elliptical; postmedial line indistinctly double, bent outwards below costa, oblique to vein 4, then strongly incurved, some pinkish points on costa beyond it; subterminal line pale, slightly defined on each side by blackish from below costa to vein 5, then defined by brown on inner side, oblique,

interrupted; terminal area purplish brown; a slight pale line at base of cilia. Hind wing pale uniformly suffused with fuscous brown; a slight black and white postmedial mark on vein 2 and a white subterminal line from above vein 2 to tornus; cilia with a fine pale line at base; the underside white, the costal area brown irrorated with white, a dark discoidal lunule and traces of postmedial and subterminal lines.

Hab. Sikhim (*Atkinson*), 3 ♂, 1 ♀, type. *Exp.* 36–40 millim.

3011. Euplexia striatovirens. (Plate CXIV. fig. 1.)

Euplexia striatovirens, Moore, P. Z. S. 1867, p. 58; Hmpsn. Moths Ind. ii. p. 213.

Head and thorax purplish fuscous, slightly mixed with grey, the metathoracic crest whitish; tarsi with slight pale rings; abdomen whitish suffused with brown. Fore wing purple-brown; subbasal line black, waved, from costa to vein 1, defined by green on each side; antemedial line defined by green on inner side, angled outwards below costa, then curved; medial area with the cell and area below it to submedian fold dark brown, the inner area green irrorated with brown; claviform and orbicular purplish fuscous slightly defined by grey and black, both confluent with a similar spot below cell; reniform white defined by black on inner side only, its centre defined by dark brown spots, rather oblique elliptical, the area beyond it greenish to the postmedial line which is double filled in with greenish, slightly bent outwards below costa to just beyond cell, incurved at discal fold, incurved and sinuous below vein 4; the postmedial area rather paler purple-brown with some pale points on costa and some greenish before the subterminal line from below costa to vein 4; subterminal line slight, greenish, slightly defined on each side by blackish, somewhat excurved below vein 7 and at middle; cilia with a fine pale line at base. Hind wing whitish suffused with fuscous brown except the inner area, in female wholly suffused; traces of a sinuous postmedial line with a blackish and white striga at vein 2; a white subterminal line from above vein 2 to tornus; cilia with a fine pale line at base: the underside white, the costal area suffused with brown, a small discoidal spot and indistinct postmedial and subterminal lines.

Hab. Sikhim (*Atkinson*, *Möller*, *Knyvett*), 6 ♂, 1 ♀, type. *Exp.* 32–34 millim.

3012. Euplexia rhoda, n. sp. (Plate CXIV. fig. 2.)

Head and thorax purplish brown with a few grey-tipped scales; palpi blackish at sides; tibiæ and tarsi blackish, the latter with slight pale rings; abdomen reddish brown tinged with grey. Fore-wing red-brown suffused with purplish fuscous or pink and irrorated with a few white scales; subbasal line represented by a black point in cell and slight double striæ from cell; antemedial line almost

obsolete towards costa, angled outwards below costa, then oblique waved and joining the postmedial line above inner margin; medial area suffused with deep rufous or blackish in and below cell; claviform absent; orbicular and reniform purplish slightly defined by white and black, the former oblique elliptical, open above, the latter narrow, oblique and emitting a streak on median nervure to the orbicular; postmedial line rather indistinct, bent outwards below costa, then minutely dentate, obliquely incurved below vein 5, some slight pale points beyond it on costa; subterminal line indistinct, greyish, slightly sinuous, defined on each side by brown and with two small black spots on it below costa; cilia with slight whitish or red line at base. Hind wing uniform fuscous brown; the underside brownish grey, with slight discoidal lunule and curved postmedial line.

Hab. Br. E. Africa, Masailand, E. Quaso (*Betton*), 2 ♂, 1 ♀, type. *Exp.* 32 millim.

3013. Euplexia amaranta.

Euplexia amaranta, Feld. Reis. Nov. pl. 110. f. 8 (1874).

Head and thorax red-brown tinged with purplish and mixed with a few white scales; tarsi tinged with ochreous white; abdomen fuscous mixed with grey, the crest on 3rd segment reddish. Fore wing dark brown tinged with purplish fuscous and pink or olive green irrorated with a few white scales; subbasal line black, sinuous, from costa to vein 1, with point beyond it in cell and short streak above vein 1; antemedial line black defined by pinkish or olive on inner side, angled outwards below costa, then oblique sinuous and joining the postmedial line above inner margin; claviform small, defined by black; orbicular purplish fuscous defined by black, oblique elliptical and confluent with a spot below cell; reniform ochreous white tinged with red and its centre more or less defined by brown, rather oblique elliptical and confluent with the spot below cell; postmedial line strongly bent outwards below costa, then minutely dentate and produced to slight black and white streaks on veins 4, 3, incurved below vein 4; postmedial area pinkish or olive on costal half, purplish on inner half, with some pale points on costa; subterminal line ochreous white defined by fuscous on inner side and by black spots in the interspaces from costa to vein 6, angled outwards at veins 4, 3; a terminal series of slight black lunules; cilia with a fine rufous line at base. Hind wing fuscous brown, the cilia reddish ochreous with a brown line through them; the underside yellowish white, the costal area, or in female wholly, irrorated with brown, a black discoidal spot, diffused sinuous postmedial and subterminal lines.

Hab. Uganda, Ruwenzori (*Legge and Wollaston*), 1 ♂; Natal, Durban (*Burrows, Gooch, Leigh*), 1 ♂, 3 ♀. *Exp.* 34–36 millim.

Larva. Very pale yellow with the warts and stigmata black; head pale orange with black line above mouth.

3014. **Euplexia chalybsa**, n. sp. (Plate CXIV. fig. 3.)

♀. Head and thorax purplish fuscous tinged with grey, the metathoracic crest pale brownish; tarsi ringed with white; abdomen grey tinged with fuscous, the dorsal crests darker. Fore wing purplish fuscous; subbasal line represented by double black striæ from costa and cell filled in with grey, a black point beyond it in cell and black and grey marks below the cell and above inner margin; antemedial line black defined by whitish on inner side, angled outwards below costa, then oblique, rather sinuous; the medial area suffused with black and grey except towards costa and inner margin; claviform slightly defined by black; orbicular purplish fuscous defined at sides only by grey and black, confluent with a spot below cell; reniform white with some fuscous in upper and lower parts, defined by black on inner side, rather oblique elliptical and confluent with the spot below cell; postmedial line indistinct, bent outwards below costa, incurved at discal fold, at vein 4 bent inwards to lower angle of cell, then oblique sinuous to inner margin; postmedial area with a whitish patch tinged with pink between veins 7 and 3 and some pale points on costa; subterminal line formed of slight grey marks defined on each side by black scales from below apex to above inner margin; a fine white line at base of cilia. Hind wing fuscous; the underside whitish irrorated with fuscous, a black discoidal spot, and diffused curved postmedial and subterminal lines.

Hab. Br. E. Africa, Kikuyu, Roromo (*Crawshay*), 1 ♀ type. *Exp.* 34 millim.

3015. **Euplexia plumbeola.** (Plate CXIV. fig. 4.)

Euplexia plumbeola, Hmpsn. Moths Ind. ii. p. 217 (1894).

♂. Head and thorax deep blue-grey, the hairs slightly tipped with whitish; palpi blackish, antennæ ringed with white at base; tibiæ and tarsi ringed with whitish; abdomen fuscous black mixed with some white, the base whitish. Fore wing deep blue-grey; the basal area with some ochreous striation except towards inner margin; antemedial line angled outwards and whitish below costa, then represented by three slightly waved ochreous lines and obsolete below vein 1; claviform represented by a white point at extremity; orbicular quadrate, paler blue-grey defined by slight whitish bars at sides and connected with a spot below cell; reniform narrow with pale rufous centre and white annulus, some black in lower part; postmedial line double and whitish towards costa, then formed by three slightly waved ochreous lines, excurved from costa to vein 4, then bent inwards to near lower angle of cell and oblique to inner margin, some white points beyond it on costa; subterminal line only defined by an olive-yellow band on its inner side from below costa to inner margin, dentate at veins 4, 3, 2, some white suffusion beyond it towards apex and some black on its outer edge below costa intersected by slight olive streaks on veins 7, 6; a slight olive

line at base of cilia. Hind wing whitish tinged with fuscous, the veins streaked with fuscous, the terminal area suffused with leaden grey; a small discoidal spot; traces of a double sinuous postmedial line filled in with whitish; a minutely dentate white subterminal line except towards costa, with some black suffusion and striation on its inner side with some ochreous beyond it at tornus; cilia with a slight olive line at base; the underside with the costal and subterminal areas black irrorated with white, a black discoidal spot, the postmedial line defined by black on inner side.

Hab. Sikhim (*Pilcher*), 1 ♂. *Exp.* 42 millim. Type † in Coll. Rothschild.

3016. Euplexia saldanha.

Euplexia saldanha, Feld. Reis. Nov. pl. 110. f. 6 (1874).

♀. Head and thorax black with a few white scales; the antennæ slightly ringed with white, the metathoracic crest rufous; tarsi ringed with white; abdomen fuscous, whitish at base. Fore wing purplish black irrorated with a few white scales; subbasal line formed by double black striæ from costa and cell filled in with brownish; antemedial line double filled in with brownish and with some brownish before it, oblique, slightly waved; the medial area blacker; claviform slightly defined by black; orbicular fuscous with slight brownish annulus defined by black except above, somewhat elliptical and connected with a spot below the cell; reniform oblique oblong, whitish tinged with rufous and with slight white and brown marks in upper and lower parts; extremity of median nervure and base of veins 3, 4 streaked with white; postmedial area pale ochreous tinged with brown or whitish tinged with fuscous, the postmedial line very indistinct except below cell, sometimes strongly defined on outer side by white scales, bent outwards below costa and below vein 5 bent inwards to lower angle of cell, the costa beyond it black with white points; subterminal line ochreous defined on inner side by blackish except at costa, dentate from vein 4 to inner margin, the area beyond it purplish black to vein 4, then brown; a terminal series of black points; cilia black with a fine pale line at base. Hind wing fuscous black, the interspaces of basal half whitish; slight waved postmedial and subterminal lines with small white lunules beyond them at veins 3, 2; cilia with fine white line at base; the underside whitish, the costal and terminal areas broadly suffused with fuscous and irrorated with white, a black discoidal lunule, slightly sinuous postmedial line, and waved whitish subterminal line except towards costa.

Ab. 1. Fore wing with the postmedial area hardly paler than the rest of wing.

♂. Fore wing with the postmedial area pale purple-brown.

Hab. Transvaal (*Cholmley*), 2 ♂, 2 ♀, Johannesburg; Natal, Estcourt (*Hutchinson*), 1 ♀; Basutoland, Maseru (*Crawshay*), 1 ♀; Cape Colony, Harding (*Mrs. Blakaway*), 1 ♀, Knysna. *Exp.* 36 millim.

3017. Euplexia albonota.

Euplexia albonota, Hmpsn. Ill. Het. B.M. ix. p. 92, pl. 161. f. 14 (1893).
Euplexia albiplaga, Hmpsn. Moths Ind. ii. p. 213 (1894).

♀. Head and thorax dark brown mixed with pale brown; tarsi ringed with white; abdomen dark brown with a few whitish scales, whitish at base. Fore wing purplish; the basal area marked with grey and black; subbasal line represented by double black striæ from costa and cell filled in with grey; antemedial line indistinctly double filled in with grey, oblique, angled outwards below costa and excurved above inner margin; medial area black except towards costa; claviform slightly defined by black; orbicular purplish slightly defined by white at sides and extending to the claviform; reniform white tinged with brown above, rather narrow, oblique, the area beyond it olive to the oblique grey postmedial band; postmedial line indistinct, bent outwards below costa, then very minutely waved, oblique below vein 4, the costa beyond it black with white points; subterminal line grey defined on inner side by black and slightly on outer side except at costa, slightly excurved below costa and waved below vein 4; a terminal series of small triangular black spots; cilia blackish with a series of white points at base. Hind wing black-brown with postmedial and subterminal white marks on vein 2; cilia white tinged with ochreous at base and with fuscous tips at apex and middle; the underside with some whitish on termen towards tornus.

Hab. Ceylon, Hewalatta (*Green*), 1 ♀ type. *Exp.* 40 millim.

3018. Euplexia poliochroa, n. sp. (Plate CXIV. fig. 5.)

♀. Head and thorax grey mixed with reddish brown; tegulæ with ochreous patches; tarsi blackish with whitish rings; abdomen grey mixed with brown. Fore wing violaceous grey tinged with brown, the medial area suffused with brown except towards costa; subbasal line double, black, angled outwards on median nervure, from costa to vein 1, and with slight streak beyond it in submedian fold; antemedial line indistinctly treble, curved and somewhat waved; claviform minute, defined by black; orbicular grey defined by black at sides only, oblique elliptical; reniform grey with some whitish in centre and whitish annulus defined by black on inner side only; postmedial line double at costa, bent outwards below costa, then treble, oblique below vein 4 and angled outwards at vein 2; subterminal line indistinct, greyish slightly defined on each side by fuscous brown and very minutely dentate; a terminal series of slight dark lunules; cilia with a fine white line at base. Hind wing grey suffused with brown; traces of a minutely waved dark postmedial line defined by whitish on outer side; a fine white line at base of cilia; the underside whitish tinged and irrorated with brown, a black discoidal spot, sinuous postmedial line, and traces of subterminal line.

Hab. Madras, Nilgiris (*Cardew*), 1 ♀ type. *Exp.* 34 millim.

3019. Euplexia augens.

Euplexia augens, Feld. Reis. Nov. pl. 110. f. 5 (1874).

Head and thorax black-brown slightly mixed with white, the metathoracic crest rufous; tarsi ringed with white; abdomen fuscous mixed with grey, some whitish hair at base. Fore wing red-brown mostly suffused with purplish fuscous and slightly irrorated with white; subbasal line represented by double black striæ from costa and cell filled in with rufous and with a black striga beyond it in cell; antemedial line indistinctly double filled in with rufous and with some rufous before it at middle, oblique, slightly waved; claviform short and broad, defined by black; orbicular purplish fuscous defined by brown and black at sides only, rounded, connected with a spot below cell; reniform ochreous white with some rufous in lower part and brown and white in upper part, defined by black on inner side and on outer by a rufous band, rather oblique elliptical and slightly angled inwards on median nervure on extremity of which there is a slight white streak; postmedial line double at costa, then hardly traceable except below vein 3, bent outwards below costa and below vein 4 incurved to lower angle of cell, then sinuous to inner margin, the costa beyond it brown with white points; subterminal line indistinct, pale, slightly waved, defined on inner side by rufous and dark brown, the area beyond it purplish fuscous to vein 4, then rufous. Hind wing whitish, the veins, inner and terminal areas suffused with brown; postmedial and subterminal dark marks on veins 4, 3, 2 with whitish lunules beyond them; cilia brown with a fine pale line at base; the underside irrorated with brown, a blackish discoidal spot and diffused postmedial and subterminal lines.

Hab. Transvaal, Modderfontein (*Cruger*), 1 ♀; Cape Colony, Knysna, Capetown (*Trimen*), 1 ♂. *Exp.* 34 millim.

3020. Euplexia debilis. (Plate CXIV. fig. 6.)

Euplexia debilis, Butl. A. M. N. H. (5) iv. p. 244 (1879).
Euplexia habilis, Saalm. Lép. Madag. p. 313, pl. xiii. f. 243 (1891).

♂. Head and thorax ochreous mixed with brown; palpi brownish at sides; antennæ slightly ringed with white; tarsi dark brown ringed with white; abdomen pale brownish ochreous. Fore wing ochreous white suffused with purplish brown; subbasal line represented by double dark striæ from costa and cell; antemedial line defined by whitish on inner side, angled outwards below costa, then oblique and strongly retracted to inner margin; claviform small, slightly defined by black; orbicular grey defined by black at sides only, rather oblique quadrate, reniform defined by blackish on inner side only, forming part of a large ochreous-white patch extending from costa to vein 3 and to apex and below vein 6 to the subterminal line; postmedial line indistinct, obsolescent on costal half, slightly bent outwards below costa, excurved to vein 4, then oblique and produced to slight dark streaks on the veins; subterminal line

ochreous white defined by brown on inner side except towards apex where the brown becomes maculate; a pale line at base of cilia. Hind wing ochreous whitish suffused with brown; the underside whitish with the costal area irrorated with brown.

Ab. 1. *habilis*. Fore wing with the pale postmedial patch reduced and less prominent.

Hab. Madagascar, Antananarivo (*Kingdon*), 1 ♂ type in bad condition. *Exp.* 34 millim.

3021. Euplexia triplaga.

Dianthœcia triplaga, Wlk. xi. 506 (1857).
Euplexia roseola, Feld. Reis. Nov. pl. 110. f. 7 (1874); Druce, Biol.-Centr. Am., Het i. p. 293.

♀. Head and thorax red-brown mixed with purplish; palpi dark brown; pectus purplish fuscous mixed with grey, the tibiæ and tarsi ringed with ochreous; abdomen brown with the dorsal crests blackish. Fore wing red-brown suffused with purple and slightly irrorated with whitish, the medial area darker; subbasal line black defined by ochreous on outer side and with slight black streaks beyond it in cell and submedian fold; antemedial line treble, the two inner lines red-brown, the outer line black, angled outwards below costa, then oblique and bent inwards to inner margin; claviform small, defined by black; orbicular fuscous with slight pale annulus defined by black, round; reniform whitish defined by black, its centre defined by brown, its upper extremity rather produced; an indistinct waved medial line, oblique from costa to median nervure, then inwardly oblique; postmedial line bent outwards below costa, then waved, incurved at discal fold and strongly below vein 4; postmedial area yellowish suffused with purplish pink and with some grey between veins 4 and 2, the costa brown with pale points; subterminal line dark brown, excurved to near termen from costa to vein 6, then incurved, angled outwards at veins 4, 3, then incurved, pale and defined by brown on inner side; terminal area purple; a fine brown terminal line; cilia dark brown with rufous line at base. Hind wing whitish, the terminal area suffused with brown, traces of a sinuous subterminal line and slight dark postmedial and subterminal marks on vein 2; cilia yellowish or suffused with brown except at base, the termen towards tornus and cilia yellow; the underside yellowish white, the costal area suffused with brown, a small discoidal spot and diffused postmedial and subterminal lines.

Hab. Panama, Chiriqui (*Champion*), 1 ♀; Venezuela (*Dyson*), 1 ♀ type. *Exp.* 36 millim.

3022. Euplexia melanocycla, n. sp. (Plate CXIV. fig. 7.)

♀. Head and thorax red-brown; tegulæ ochreous; tarsi brown ringed with ochreous; abdomen whitish irrorated with brown, the

dorsal crests rufous, the ventral surface black-brown. Fore wing red-brown mixed with greyish ochreous; subbasal line black, waved, from costa to submedian fold where there is some black irroration beyond it; a slight black mark on inner margin before the antemedial line, which is indistinctly double, oblique, waved; claviform small, defined by black; orbicular blue-black with a slight whitish mark in upper part, defined by ochreous and black at sides only, oblique elliptical and connected with a spot below the cell; reniform large, ochreous white defined by black on inner side only and with a little brown in lower extremity; an indistinct curved medial line; postmedial line strongly bent outwards below costa, then dentate, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line ochreous white defined on outer side by some black scales and dentate to termen at veins 7, 6, 4, 3, 2, the area beyond it blue-black; a slight terminal black line; cilia red-brown mixed with fuscous. Hind wing ochreous white, the costal area tinged with red-brown; a small dark spot at extremity of vein 2; cilia tipped with brown on apical half; the underside with the costal area thickly irrorated with red-brown, a slight discoidal lunule and traces of a curved postmedial line.

Hab. Br. E. Africa, Kikuyu, Nairobi plains (*Crawshay*), 1 ♀ type; Molo R. (*Ford*), 1 ♀. *Exp.* 36 millim.

3023. Euplexia lucipara.

Noctua lucipara, Linn. Syst. Nat. ed. x. p. 518 (1758); Esp. Schmett. iv. pl. 174. ff. 1–4; Hübn. Eur. Schmett., Noct. f. 55; Dup. Lép. Fr. vi. p. 348, pl. 94. f. 5; Frr. Neue Beitr. f. 82; Steph. Ill. Brit. Ent., Haust. iii. p. 3; Staud. Cat. Lep. pal. p. 185; Smith, Cat. Noct. N. Am. p. 171.

Head and thorax purplish fuscous mixed with a few whitish scales; pectus dark brown and grey, the tarsi with ochreous rings;

Fig. 35.—*Euplexia lucipara*, ♂. ½.

abdomen dark brown mixed with grey. Fore wing red-brown suffused with purplish fuscous; subbasal line represented by double black striæ from costa and cell filled in with purplish and with a black striga beyond them in cell; antemedial line indistinctly double filled in with purplish, angled outwards below costa, then oblique sinuous; claviform moderate, defined by black; orbicular purplish fuscous, with slight greyish annulus defined by black

somewhat oblique elliptical and confluent with a spot below the cell; reniform ochreous white defined by black except above, and with some brown in upper and lower parts, rather oblique elliptical; traces of a medial line oblique from costa to median nervure, then waved; postmedial area pale rufous tinged with purplish, the postmedial line double, slightly bent outwards below costa, then minutely waved, bent inwards at vein 4 to near lower angle of cell, then oblique, some whitish points beyond it on costa; subterminal line rufous defined on each side by blackish and with a somewhat dentate spot below costa, incurved below vein 3; a terminal series of small black lunules; cilia with fine rufous line at base and chequered rufous and fuscous at tips. Hind wing ochreous white, the veins and terminal area suffused with fuscous brown; an indistinct waved postmedial line and slight black and white postmedial and subterminal marks on vein 2; cilia brown with fine ochreous line at base; the underside yellowish white, the costal area suffused with red-brown and irrorated with white, a black discoidal lunule, minutely waved postmedial line, and traces of subterminal line.

The Oriental and American form has the postmedial area of fore wing more purplish and less rufous than the typical European form.

Hab. Canada, Manitoba, Aweme (*Criddle*), 1 ♀, Alberta, Calgary (*Wolley-Dod*), 4 ♂, 3 ♀, Br. Columbia, Kaslo (*Mrs. Nicholl*), 1 ♀; U.S.A., Massachusetts, Beverly, 2 ♂, New York, Evans Center (*Grote*), 2 ♀; Britain, Leech Coll.; France, Leech Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland; Spain, Bilbao; N. Italy; ? Algeria; Russia, Livonia, Zeller Coll., St. Petersburg, Zeller Coll.; Armenia; Asia Minor, Pontus; W. Siberia; E. Siberia, Amurland, Ussuri; Japan, Hakodaté, 1 ♂, 1 ♀, Imaichi (*Lewis*), 3 ♂, Tokio (*Maries*), 2 ♂, 1 ♀, Yokohama (*Lewis*, *Bristowe*, *Manley*), 2 ♂, 3 ♀; C. China, Chang Yang (*Pratt*), 1 ♂; W. China, Chia-kou-ho (*Pratt*), 1 ♂, 1 ♀, Pu-tsu-fang, 1 ♂. *Exp.* 32–38 millim.

Larva. Meyr. Brit. Lep. p. 128; Barrett, Lep. Brit. v. p. 50, pl. 190. f. 2.

Greenish brown with numerous waved dark brown or blackish lines; a dorsal series of darker diamond-shaped marks; spots whitish; head and thoracic plate dark brown. Food-plants: *Ranunculus*, *Ligustrum*, Ash, &c. 12–5.

Head shining pale brown. Body uniform, green or brown with obscure crossed oblique stripes on the dorsum; a pair of small distinct white dots on joint 12; a narrow brown stigmatal line; substigmatal band obsolete. Food-plants various.—H. G. D.

3024. Euplexia semifascia.

Hadena semifascia, Wlk. xxxiii. 737 (1865); Hmpsn. Ill. Het. B.M. viii. p. 14, pl. 143. f. 11; id. Moths Ind. ii. p. 212.
Euplexia cuprea, Moore, P. Z. S. 1874, p. 578.

Head and thorax purplish brown slightly tinged with grey;

tibiæ and tarsi with pale rings; abdomen dark brown, the crests tinged with grey. Fore wing reddish brown, the medial area blackish, the postmedial area paler; subbasal line represented by double black striæ from costa and cell with a slight striga beyond them in cell and streak below cell; antemedial line indistinctly double filled in with ochreous, angled outwards below costa, then oblique and bent inwards to inner margin; orbicular brownish defined by black, oblique elliptical and confluent with a spot below cell; reniform ochreous white defined by black and its centre by brown, rather oblique elliptical; postmedial line blackish defined by ochreous on outer side, bent outwards below costa, then oblique and slightly sinuous, with traces of two other lines beyond it and some pale points on costa; subterminal line indistinct, pale defined by dark brown on inner side, slightly angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of slight black lunules; cilia with a fine pale line at base. Hind wing yellowish, wholly suffused with brown; the underside with black discoidal spot and indistinct diffused curved postmedial and subterminal lines.

Ab. 1. *cuprea*. Darker; fore wing suffused with purplish fuscous, the ante- and postmedial areas tinged with purplish pink.

Hab. Punjab, Simla, 1 ♀, type *cuprea*, Murree (*Harford*), 1 ♂, 1 ♀, Dalhousie, 1 ♀, Dharmsála (*Hocking*), 1 ♂, 5 ♀; Sikhim; Tibet, Yatung (*Hobson*, *Bingham*), 1 ♂, 1 ♀; Bombay, Satara; Madras, Nilgiris (*Swinhoe*), 1 ♀, Coimbatore (*Walhouse*), 1 ♂ type. *Exp.* 32–40 millim.

3025. **Euplexia azyga**, n. sp. (Plate CXIV. fig. 8.)

♀. Head and thorax red-brown mixed with black; palpi and frons blackish; tarsi black with pale rings; abdomen greyish tinged with rufous and irrorated with black. Fore wing red-brown irrorated with black, the basal inner area, the end of cell and the medial area below the cell suffused with black; subbasal line represented by double black striæ from costa and cell; antemedial line double, waved, oblique from costa to submedian fold, then incurved; claviform moderate, defined by black; orbicular rufous irrorated with black and defined by black except above, oblique elliptical; reniform oblique oblong, defined by black on inner side and slightly on outer; a black medial shade, oblique from costa to below cell, then approximated to postmedial line, which is indistinct, double, bent outwards below costa, then minutely waved, oblique below vein 4 and widely separated at inner margin from the antemedial line, some faint pale points beyond it on costa; subterminal line indistinct, double, minutely waved, evenly curved, the veins beyond it with slight black streaks; a fine black terminal line; cilia black with punctiform pale line at base. Hind wing whitish wholly suffused and irrorated with dark brown, the terminal area rather darker; a faint postmedial line defined by whitish on outer edge; cilia ochreous at base, dark brown at tips; the underside

whitish irrorated with black-brown, a black discoidal spot and diffused postmedial and subterminal lines.

Hab. Br. E. Africa, Nairobi (*R. Ford*), 1 ♀ type. *Exp.* 36 millim.

3026. **Euplexia melanistis**, n. sp. (Plate CXIV. fig. 9.)

♀. Head and thorax black, the scales tipped with grey; tarsi ringed with white; abdomen black-brown mixed with grey. Fore wing black-brown tinged with purple and irrorated with white; subbasal line represented by double black striæ from costa and cell and one in cell; antemedial line indistinctly double, oblique, slightly waved; claviform slightly defined by black; orbicular rounded, defined by black except above and connected with a spot below cell; reniform rather narrow and slightly produced at upper extremity, slightly defined by white and with pale yellow marks at middle on inner and outer sides; postmedial line indistinct, double at costa, bent outwards below costa, at vein 4 bent inwards and obliquely waved to inner margin, some white points beyond it on costa; subterminal line represented by a series of black marks in the interspaces; cilia with a pale punctiform line at base. Hind wing black-brown, with a white postmedial point on vein 2 and subterminal points on veins 3, 2; cilia with a slight pale line at base and whitish tips; the underside irrorated with white, a blackish discoidal lunule, curved postmedial line, and diffused subterminal line.

Hab. Madras, Palni Hills, 7000′ (*Campbell*), 1 ♀ type. *Exp.* 30 millim.

*3027. **Euplexia aureopuncta.** (Plate CXIV. fig. 10.)

Euplexia aureopuncta, South, ined.

Head and thorax deep purplish brown; antennæ with the basal half of shaft ringed with white; tarsi ringed with white; abdomen greyish brown. Fore wing deep brown suffused with purple-grey, the medial area without purple-grey tinge except on costal and inner areas; subbasal line represented by black-brown marks on costa and below cell, the former with whitish striga on outer edge, the latter crossed by a whitish striga; antemedial line blackish defined by whitish scales on inner edge and with black patches beyond it on costa and in cell; orbicular purplish grey defined by black and with whitish scales on inner and outer edges, round; reniform rather oblique oblong defined by black and yellowish white at sides and with reddish-yellow centre, open above and below; a medial black patch on costa and traces of a line from cell to inner margin; postmedial line black defined by yellowish white on outer side, expanding into a black patch on costa, bent outwards below costa, then waved, slightly incurved at discal fold and strongly below vein 4, some whitish striæ beyond it from costa; a

diffused black-brown subterminal band excurved below vein 7 and at middle, incurved at discal fold and below vein 3, with slight dentate yellow line on it between veins 5 and 2; a terminal series of slight dark lunules with yellow points at extremity of veins and on base of cilia, which are black-brown. Hind wing dark brown; cilia yellowish with diffused brown line through them except towards tornus; the underside grey-white, the costal area suffused with brown, a blackish discoidal lunule and diffused postmedial line and subterminal band.

Hab. Japan, Tu-shima, type † in Coll. Wileman. *Exp.*, ♂ 42, ♀ 46 millim.

3028. **Euplexia magniclavis.** (Plate CXIV. fig. 11.)

Dipterygia magniclavis, Hmpsn. J. Bomb. N. H. Soc. xi. p. 443 (1897).

♂. Head and thorax deep purplish red-brown mixed with grey and a few white and black scales; tarsi with blackish bands; abdomen grey tinged with purplish red, the crests purplish red tipped with grey. Fore wing deep purplish red-brown mixed with grey; subbasal line whitish, angled outwards below costa and cell and inwards in cell, ending at vein 1; antemedial line represented by double black striæ from costa, then whitish, oblique from costa to vein 1, then bent inwards to inner margin; claviform large, deep red-brown defined by black except above; orbicular and reniform with slight pale annuli incompletely defined by black, the former oblique elliptical, the latter rather constricted at middle with small white spot on its outer edge; a slight waved medial line; postmedial line indistinct, defined by grey on outer side, bent outwards below costa and incurved below vein 4, some brown points beyond it on the veins and grey points on costa, and a greyish band beyond it at middle; subterminal line whitish with a small black spot on inner side below vein 2, angled outwards at vein 7 and slightly excurved at middle; the apex greyish; a terminal series of small black lunules. Hind wing yellowish white, the terminal area broadly suffused with fuscous except towards tornus; postmedial blackish points on veins 4–1; a black terminal line and diffused line through the cilia from apex to vein 2; the underside with the costal area irrorated with brown, a slight discoidal spot and sinuous postmedial and diffused subterminal lines except towards inner margin.

Hab. Assam, Khásis, 1 ♂ type. *Exp.* 40 millim.

*3029. **Euplexia prolifera.** (Plate CXIV. fig. 12.)

Mamestra prolifera, Wlk. ix. 238 (1856).

♀. Head and thorax purplish fuscous slightly mixed with grey, the head and tegulæ tinged with ochreous; tarsi with pale rings; abdomen greyish fuscous. Fore wing purplish fuscous with slight grey irroration; traces of a waved ochreous subbasal line from

costa to submedian fold; an indistinct oblique waved antemedial line, angled outwards below costa and inwards on vein 1 and defined by ochreous on inner side; claviform moderate, defined by black; orbicular round with slight ochreous annulus defined by black; reniform very ill-defined by ochreous and black scales and with a prominent ochreous lunule on its outer edge; postmedial line very ill-defined, ochreous with some black scales on it, bent outwards below costa, excurved to vein 4, then oblique, some white points beyond it on costa; subterminal line represented by a series of ochreous and black dentate marks; a terminal series of slight black lunules. Hind wing fuscous brown, the cilia grey at tips; the underside fuscous slightly irrorated with grey.

Hab. Natal, Durban (*Leigh*), 1 ♀; N. S. Wales, type † ♀ in Mus. Oxon.; Victoria, Melbourne, in Coll. Turner. *Exp.* 44–46 millim.

The Natal specimen is probably introduced, a number of exotic species find their way to S. Africa in fodder.

3030. **Euplexia metallica.** (Plate CXIV. fig. 13.)

Mamestra metallica, Wlk. xxxii. 666 (1865); Hmpsn. Moths Ind. ii. p. 213.

Head and thorax dark red-brown with some grey scales; tarsi with slight pale rings; abdomen pale grey-brown with some ochreous hair at sides and extremity, the dorsal crests and ventral surface darker. Fore wing dark red-brown suffused with silvery purple especially on the veins, the inner margin with fine red streak; subbasal line indistinctly double, waved, from costa to vein 1; antemedial line double, waved, oblique; claviform small, defined by blackish; orbicular with brown centre and slight purplish annulus defined by blackish, oblique elliptical; reniform with brown centre and slight pale annulus defined by blackish, an ochreous-white patch on its outer edge; postmedial line double, bent outwards below costa, then minutely dentate, oblique below vein 4, the area beyond it often with some reddish in the interspaces and some whitish points on costa; subterminal line indistinct, greyish defined by black-brown suffusion on inner side, somewhat angled outwards at vein 7, then minutely waved; a fine waved dark terminal line; cilia with slight grey line at base. Hind wing brown with a yellowish tinge towards base; a fine ochreous line at base of cilia; the underside yellowish suffused with brown except towards inner margin, the costal area irrorated with white, traces of a curved postmedial line.

Hab. Sikhim (*Atkinson*, *Möller*), 6 ♂, 4 ♀, type. *Exp.* 40–50 millim.

3031. **Euplexia harfordi.** (Plate CXIV. fig. 14.)

Ancara harfordi, Hmpsn. Moths Ind. ii. p. 224 (1894).

Head and thorax black-brown, the scales slightly tipped with grey; tarsi ringed with pale brown; abdomen dark brown mixed

with grey, some pale hair at base. Fore wing dark brown suffused with silvery purple, the inner margin with slight red streak; subbasal line indistinct, double, waved, from costa to submedian fold, some reddish and a black point beyond it in cell and a faint reddish streak in submedian fold; antemedial line indistinctly double, oblique, irregularly dentate; claviform small, defined by black; orbicular with slight reddish annulus defined by black, oblique elliptical; reniform incompletely defined by black with reddish bar on inner side and yellowish white spot with points above and below it on outer edge, connected with orbicular on median nervure by a fascia; an indistinct waved medial line, oblique from costa to below cell; postmedial line indistinctly double, bent outwards below costa, then minutely dentate, oblique below vein 4, with reddish streaks beyond it in the interspaces except towards costa, the streak above vein 5 extending to reniform, some pale points on costa; subterminal line represented by slight reddish spots defined on inner side by blackish spots except towards costa and inner margin, slightly angled outwards at vein 7 and incurved below vein 3, with slight black streaks beyond it in the interspaces to the terminal black lunules. Hind wing pale yellowish brown, the terminal area suffused with fuscous; an indistinct curved postmedial line; cilia dark brown with a fine ochreous line at base; the underside yellowish, the costal and terminal areas suffused with brown and irrorated with whitish, a slight discoidal lunule.

Hab. Punjab, Sabathu (*Harford*), 5 ♂, 1 ♀, type. *Exp.* 50–52 millim.

3032. **Euplexia erythriris**, n. sp. (Plate CXIV. fig. 15.)

♂. Head and thorax black-brown, the scales slightly tipped with grey; legs irrorated with white, the tarsi slightly ringed with white; abdomen fuscous brown. Fore wing black-brown irrorated with purple and grey, the medial area darker except towards costa, the inner margin with red streak; traces of a double waved subbasal line from costa to submedian fold; antemedial line indistinct, double, oblique, waved; claviform indistinctly defined by blackish; orbicular and reniform with red annuli defined by black, the former oblique elliptical, the latter rather narrow and angled inwards on median nervure below orbicular to the antemedial line; a very indistinct waved medial line oblique from costa to below cell; postmedial line double, bent outwards below costa, then minutely dentate, excurved to vein 4, then oblique, some white points beyond it on costa; subterminal line reddish defined on inner side by black-brown patches in the interspaces, slightly angled outwards at vein 7 and incurved below vein 3, with slight black streaks beyond it in the interspaces to the terminal lunules; cilia black-brown with a slight pale line at base. Hind wing dark brown with traces of a pale subterminal band except towards costa and inner margin; cilia with whitish line at base and whitish tips; the

underside greyish brown with traces of discoidal lunule, curved postmedial line and diffused subterminal band.

Hab. Assam, Khásis, 1 ♂ type. *Exp.* 50 millim.

*3033. Euplexia adamantina. (Plate CXIV. fig. 16.)

Euplexia adamantina, Turner, Tr. R. Soc. S. Austr. xxx. p. 120 (1906).

♀. Head and thorax bright rufous mixed with dark brown; tarsi with pale rings; abdomen fuscous brown slightly tinged with grey. Fore wing deep rufous to the postmedial line, then dark purple-brown, the costa suffused with dark brown and grey; traces of a waved grey subbasal line from costa to submedian fold; an indistinct waved antemedial line slightly defined by olive on outer side; orbicular and reniform with olive centres and white annuli defined by black, the tornus small, irregularly rounded, the latter V-shaped, open above and below; postmedial line defined by olive on inner side, minutely dentate, bent outwards below costa, excurved to vein 4, then oblique, some white points on costa beyond it; subterminal line represented by a series of grey and black dentate marks, slightly angled outwards at vein 7 and excurved at middle. Hind wing fuscous brown, the cilia white at tips; the underside slightly irrorated with white and with dark discoidal lunule.

Hab. Victoria, Melbourne, type † ♀ in Mus. Melbourne. *Exp.* 40 millim.

*3034. Euplexia signata. (Plate CXIV. fig. 17.)

Euplexia signata, Lower, Tr. R. Soc. S. Austr. xxix. p. 173 (1905).

♂. Head, thorax, and abdomen rufous largely mixed with greyish fuscous. Fore wing rufous slightly suffused with fuscous; the subbasal line represented by double black striæ from costa and cell with a small semicircular black mark beyond it in the cell; a large wedge-shaped black mark above inner margin near base; antemedial line pale, sinuous, oblique from costa to vein 1, then bent inwards, a rufous and black patch between it and postmedial line below the cell extending to vein 1; the orbicular and reniform rufous with pale annuli defined by a black patch in cell before and between them and below orbicular, a black patch beyond reniform above vein 5; the orbicular oblique elliptical, open above, the reniform angled inwards on median nervure; postmedial line indistinct, pale, bent outwards below costa, incurved below vein 7, angled outwards at vein 5, then incurved and sinuous, the costal area beyond it dark with some pale points on it, a series of black points beyond it on the veins from vein 7 to inner margin; subterminal line indistinct, pale, defined on inner side by brownish and some black points with two small wedge-shaped black marks below costa, slightly angled outwards at vein 7 and waved at veins 4, 3; a terminal series of small black lunules. Hind wing deep fuscous,

the cilia rufous; the underside rufous suffused with fuscous especially on terminal area; a slight discoidal lunule.

Hab. Tasmania, Hobart, type † ♂ in Coll. Lower. *Exp.* 46 millim.

*3035. Euplexia polycmeta. (Plate CXIV. fig. 18.)

Euplexia polycmeta, Turner, Pr. Linn. Soc. N.S.W. 1902, p. 83.

♂. Head grey; palpi black at sides; frons with black band above it, vertex of head with black spots; thorax clothed with dark brown and black scales; legs grey and black; abdomen grey with the dorsal crests black. Fore wing grey, the medial area suffused with red-brown and black; a prominent double black subbasal line from costa to submedian fold; an oblique double black antemedial line; claviform outlined in black; orbicular and reniform grey with black outline, the former round, the latter with black striga on grey patch above it on costa; a waved black medial line; the postmedial line double, waved, black, bent outwards below costa, excurved to vein 3, angled inwards in discal fold and incurved below vein 3, with a prominent black lunulate line beyond it from vein 3 to inner margin; an indistinct dentate subterminal line with rufous suffusion on its inner edge; the veins of terminal area streaked with black; a dentate black terminal line. Hind wing dark brown, paler towards base; the cilia grey with a brown line through them; the underside with the basal half white irrorated with brown, a black discoidal spot and sinuous medial line, the terminal half suffused with black brown.

Hab. Queensland, Brisbane, type † ♂ in Coll. Turner. *Exp.* 38 millim.

*3036. Euplexia callisina. (Plate CXIV. fig. 19.)

Euplexia callisina, Turner, Pr. Linn. Soc. N.S.W. 1902, p. 81.

♀. Head and thorax clothed with black, brown, and grey scales; abdomen fuscous brown mixed with grey, grey at base and on ventral surface. Fore wing clothed with black, brown, and grey scales, the medial area darker, the veins streaked with grey; the subbasal line from costa to submedian fold and the antemedial line double, waved, and filled in with grey; claviform small, defined by black; orbicular and reniform black and white with white annuli, the former elliptical, erect, the latter narrow and constricted at middle; the postmedial line double, black, filled in with grey, strongly bent outwards below costa, then waved and incurved below vein 4, slightly angled inwards in discal fold; the subterminal line white, minutely dentate and with series of black lunules on its inner side, angled outwards at vein 7 and oblique below vein 4, some whitish points on costa towards apex; the terminal area grey; a terminal series of small black lunules; cilia pale brown with black lines through them and whitish streaks at the

veins. Hind wing deep fuscous brown; the cilia white at tips. Underside fuscous, the costal area of both wings grey irrorated with black; a diffused dentate postmedial line and indistinct subterminal line; hind wing with black discoidal lunule.

Hab. Victoria, Gisborne, type† ♀ in Coll. Lyell. *Exp.* 50 millim.

*3037. **Euplexia leucostigma.** (Plate CXIV. fig. 20.)

Euplexia leucostigma, Turner, Pr. Linn. Soc. N.S.W. 1902, p. 82.

♂. Head rufous and dark brown; tegulæ rufous tipped with dark brown and grey scales; patagia dark brown and grey; thorax rufous with the metathoracic crest black; pectus with whitish hair; abdomen grey-brown with the dorsal crests black, the two middle ones large. Fore wing suffused with reddish brown and irrorated with black; a waved black subbasal line from costa to vein 1 defined by whitish on outer side and angled outwards below costa; a black antemedial line defined by whitish on inner side, oblique from costa to submedian fold where it is angled, then waved and with a black streak in submedian fold to the postmedial line; a diffused rufous medial shade; orbicular defined by black, oblique elliptical; reniform white defined by black, with a rufous lunule at centre and connected with costa by a white patch; the postmedial line black, dentate, excurved from costa to vein 3, then incurved and with a black mark beyond it on each side of vein 2; an indistinct waved subterminal line. Hind wing reddish brown suffused with fuscous especially towards termen, the costal area pale; an indistinct discoidal lunule and curved postmedial line; cilia white at tips; the underside white irrorated with brown, a black discoidal lunule and irregularly waved postmedial line, the terminal area black narrowing to vein 1 and leaving some white on medial part of termen.

Hab. Victoria, Gisborne, type† ♂ in Coll. Lyell. *Exp.* 36 millim.

Genus **ANCARA.**

	Type.
Ancara, Wlk. xv. 1714 (1858)	*replicans.*

Proboscis fully developed; palpi upturned, the 2nd joint moderately scaled and reaching to about vertex of head, the 3rd long and porrect; frons rounded; eyes large, rounded; antennæ of male typically with long branches, the apical fourth ciliated, of female with shorter branches; head with crest on vertex; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; pectus clothed with long hair; tibiæ fringed with hair; abdomen with dorsal series of crests large on 3rd and 4th segments. Fore wing with the termen crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base only.

Sect. I. Antennæ of male bipectinate with long branches to three-fourths length, of female with short branches.

A. Hind wing orange.
  a. Fore wing with yellow streak above vein 5 from reniform to termen, the postmedial line incurved and not dentate below vein 5 ..... *cebea*.
  b. Fore wing without yellow streak above vein 5, the postmedial line incurved and dentate below vein 4 ..... *griseola*.
B. Hind wing not orange.
  a. Fore wing with curved rufous line just before termen ..... *replicans*.
  b. Fore wing without rufous line just before termen.
    a^1. Fore wing deep purplish red-brown suffused with violaceous grey ..... *obliterans*.
    b^1. Fore wing ochreous more or less completely suffused with olive-fuscous ..... *anæmica*.

3038. **Ancara cebea.** (Plate CXIV. fig. 21.)

Ancaroides kebea, Beth.-Baker, Nov. Zool. xiii. p. 196 (1906).

♂. Head and thorax red-brown mixed with ochreous white especially on vertex of head and tegulæ; palpi in front and 3rd joint ochreous; pectus with the hair yellowish; abdomen orange-yellow, the extremity tinged with brown, the anal tuft ochreous. Fore wing deep red-brown suffused in parts with black-brown; subbasal line double filled in with rufous and with oblique rufous streak from its lower extremity to inner margin; antemedial line indistinct, rufous, angled outwards in cell and above inner margin and inwards in submedian fold; claviform represented by a black-brown patch with slight greyish patch beyond it; orbicular and reniform defined by rufous, the former oblique elliptical, the latter with black-brown centre, a fine yellow streak from it to termen above vein 5; traces of a dark medial line, oblique from costa to lower angle of cell, then parallel to postmedial line, which is double filled in with ochreous, bent outwards below costa, oblique to vein 5, then obliquely incurved; subterminal line almost obsolete with patches of blackish suffusion between it and postmedial line from vein 5 to inner margin; a terminal series of small black lunules. Hind wing orange-yellow, the terminal area deep reddish brown, broad at costa, narrowing to a point at tornus; the underside with small black discoidal spot.

Hab. Br. New Guinea, Mt. Kebea, Ekeikei, Aroa R., type † ♂ in Coll. Bethune-Baker; Solomon Is., Bougainville (*Meek*), 1 ♂. *Exp.* 50 millim.

3039. **Ancara griseola.** (Plate CXIV. fig. 22.)

Ancaroides griseola, Beth.-Baker, Nov. Zool. xiii. p. 197 (1906).

♂. Head and thorax black-brown mixed with some rufous; pectus and base of legs with some yellow; abdomen yellow with dorsal black-brown fascia, the crests blackish, the anal tuft mixed with brown. Fore wing black-brown mixed with some rufous; subbasal line double, black, waved, from costa to vein 1; ante-

medial line double, curved, waved; orbicular and reniform large, blue-white with some brown in centres, the former confluent with a mark below the cell; a broad medial blue-white band from cell to inner margin, with dentate edges and traversed by a dentate dark line; postmedial line indistinct, double, bent outwards below costa, then dentate, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line represented by a series of slight yellowish lunules defined on inner side by small dentate black marks, somewhat excurved below vein 7 and at middle; a fine terminal black line expanding into small spots in the interspaces with yellow points before them; cilia with a fine yellowish line at base. Hind wing orange with broad terminal black-brown band, expanding at costa, its inner edge angled inwards at veins 2 and 1. Underside of fore wing with the basal half yellowish; hind wing with the costal area slightly irrorated with brown, a small discoidal spot.

♀. Abdomen with the extremity black with yellow spot on anal tuft; fore wing with white spot on antemedial line below the cell, the orbicular defined by white, the reniform by white points, a pale patch below end of cell but no blue-white band, the postmedial line with series of blue-white points beyond it on the veins.

Hab. Br. New Guinea, Ekeikei (*Pratt*), type† ♂ in Coll. Bethune-Baker, Sogeri, 1 ♀. *Exp.* ♂ 54, ♀ 62 millim.

3040. Ancara replicans.

Ancara replicans, Wlk. xv. 1715 (1858).

Head and thorax dark brown mixed with rufous; tarsi ochreous with dark bands; abdomen rufous tinged with fuscous. Fore wing dark brown tinged with rufous and irrorated with purplish grey, the inner margin with slight ochreous and rufous fascia; subbasal

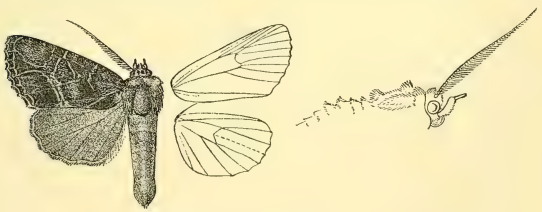


Fig. 36.—*Ancara replicans*, ♂. ½.

line double filled in with rufous, waved, from costa to submedian fold and with very oblique rufous streak from its lower extremity to inner margin; antemedial line represented by oblique rufous striæ from costa to orbicular and orbicular to submedian fold; claviform represented by a blackish patch; orbicular and reniform

defined by rufous, the former rather oblique quadrate, the latter very large, extending well below the cell and narrowing above, with two rufous streaks beyond it on each side of discal fold, parallel to beyond postmedial line, then the upper bent upwards to termen below apex, the lower downwards to termen at vein 4; an indistinct medial line, oblique to median nervure, excurved to submedian fold, then oblique; postmedial line double filled in with rufous, bent outwards below costa, oblique to vein 5, then incurved, some white points beyond it on the veins and rufous points on costa; subterminal line indistinct, greyish defined on inner side by obscure dentate black marks, angled outwards at veins 7, 4, 3 and inwards at discal and submedian folds; a fine evenly curved rufous line before termen, the veins beyond it streaked with rufous; cilia with fine rufous line at base and intersected with rufous. Hind wing dark brown with a reddish tinge; cilia with slight rufous line at base and intersected with rufous; the underside greyish, the terminal area suffused with fuscous, a dark discoidal spot and curved minutely waved postmedial line.

Hab. Singapore, 1 ♀; Borneo, Sarawak (*Brooks*, *Wallace*), 2 ♂ type, Kuching (*Shelford*), 1 ♂. *Exp.* 50 millim.

3041. Ancara obliterans.

Ancara obliterans, Wlk. xv. 1715 (1858); Hmpsn. Ill. Het. B. M. viii. p. 14, pl. 143. f. 19; id. Moths Ind. ii. p. 223.
Ancara punctiplaga, Wlk. Journ. Linn. Soc. vi. p. 191 (1862).

Head, thorax, and abdomen red-brown mixed with dark brown; pectus and ventral surface of abdomen yellowish; coxæ and femora with some pink hair; tarsi with pale rings. Fore wing red-brown mixed with dark brown, the veins streaked with purplish; subbasal line indistinct, double, waved, from costa to submedian fold; antemedial line indistinct, double, waved, angled inwards on vein 1; claviform represented by a blackish patch; orbicular and reniform with slight reddish annuli incompletely defined by black with some pale points on their edges and somewhat constricted at middle, the former elliptical, the latter large and extending well below cell; medial line represented by a striga from costa to reniform and oblique waved line from reniform to inner margin; postmedial line double, rather indistinct, bent outwards below costa, then minutely dentate, excurved to vein 4, then incurved; some white points beyond it on the veins and rufous points on costa; subterminal line greyish with some slight dentate black marks on inner side at middle and dark patch beyond it at discal fold, minutely dentate, angled outwards at veins 7, 6, 4, 3, and inwards at discal and submedian folds; a terminal series of black lunules slightly defined by greyish on inner side; cilia intersected with rufous. Hind wing dark brown with a reddish tinge; cilia tinged with rufous and with a fine pale line at base; the underside ochreous, the terminal area suffused with brown, a dark discoidal spot, curved diffused postmedial line, and traces of diffused subterminal line.

Ab. 1. *punctiplaga*. Fore wing with prominent elliptical rufous patch beyond the reniform.

Ab. 2. Fore wing with elliptical white patch beyond the claviform.

Ab. 3. Fore wing with the orbicular and reniform defined by white and white patch beyond the claviform.

Hab. MADRAS, Nilgiris (*Hampson*), 1 ♀ ; PERAK, Goping (*Kunstler*), 2 ♂, 1 ♀ ; SINGAPORE (*Ridley*), 12 ♂, 1 ♀ ; BORNEO, Sarawak (*Wallace*, *Everett*), 2 ♂, 5 ♀ type, Paku (*Shelford*), 1 ♀. *Exp.* 42–52 millim.

3042. Ancara anæmica, n. sp. (Plate CXIV. fig. 23.)

♂. Head and thorax ochreous tinged with rufous and mixed with some fuscous; tegulæ with slight dark medial line; pectus, legs, and abdomen ochreous, the legs slightly tinged with pink. Fore wing ochreous, irrorated and in places suffused with olive fuscous, the base of inner area and a patch beyond the reniform tinged with rufous; antemedial line double and minutely dentate at costa, then single, angled inwards on vein 1 and outwards above inner margin; claviform represented by a blackish patch with an ochreous patch beyond it; orbicular and reniform faintly defined by blackish, the former ochreous and conjoined to the pale patch below cell, the latter narrow with some olive in centre and slight pale annulus; a dark medial line oblique from costa to vein 2, then inwardly oblique and somewhat dentate; postmedial line blackish, double towards costa, bent outwards below costa, then dentate, excurved to vein 4, then oblique; subterminal line dark, dentate, angled outwards at veins 4, 3 and inwards at discal and submedian folds, with a dark streak beyond it above vein 3; a terminal series of small black lunules; cilia reddish brown. Hind wing ochreous tinged with pinkish and irrorated with fuscous, the terminal area suffused with fuscous, the termen and cilia ochreous; the underside ochreous, the terminal area slightly irrorated with black, a black discoidal spot and curved pinkish postmedial line.

♀. Head and thorax suffused with olive fuscous; abdomen tinged with brown; fore wing with the ground-colour olive fuscous, the markings indistinct; hind wing wholly suffused with fuscous brown.

Hab. CEYLON, Haldamulla (*Mackwood*), 1 ♂ type, Hambantota (*Green*), 1 ♀. *Exp.* ♂ 42, ♀ 44 millim.

SECT. II. Antennæ of male ciliated.

A. Fore wing with the ground-colour violaceous grey ..... *glaucochlora*.
B. Fore wing with the ground-colour red-brown..... *viridipicta*.

3043. Ancara glaucochlora.

Ancara glaucochlora, Hmpsn. Moths Ind. ii. p. 226 (1894).

Head and tegulæ pale rufous mixed with some grey-white, the latter moss-green at tips; thorax moss-green with some rufous in

prothoracic crest and on base of tegulæ; palpi rufous, whitish in front; antennæ brown ringed with white; pectus and legs ochreous mixed with brown, the tarsi brown with slight pale rings; abdomen grey irrorated with fuscous, the dorsal crests moss-green, those on segments 3, 4 mixed with rufous, the ventral surface ochreous. Fore wing violaceous-grey irrorated with fuscous; the basal area to vein 1 and medial area moss-green conjoined by streaks below costa and submedian fold, the costa blackish with slight rufous marks below it; subbasal line double, rufous, angled outwards below costa and ending at submedian fold; antemedial line brown, oblique from costa to submedian fold where it is angled inwards

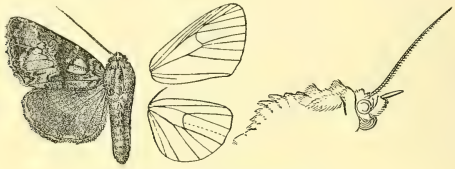


Fig. 37.—*Ancara glaucochlora*, ♂. ½.

almost to subbasal line, then excurved and double; claviform and orbicular absent; reniform small, slightly defined by white; an oblique brown medial line; postmedial line dark, irregularly dentate, excurved between veins 8 and 6, angled outwards at vein 4, then incurved and excurved again to inner margin, the green extending beyond it at costa and followed by some white points; subterminal line dark, defined on outer side by moss-green patches, excurved below vein 7 and at middle, angled inwards at discal and submedian folds where there are slight dark spots beyond the green patches; a terminal series of small dark lunules defined by green on inner side. Hind wing dark reddish brown, the basal area yellowish; a slight dark discoidal bar and postmedial line defined by yellowish on outer side and excurved below submedian fold; the underside ochreous white irrorated with fuscous, a black discoidal lunule with line from it to inner margin, sinuous postmedial line and diffused subterminal band.

Hab. Sikhim (*Knyvett*), type † ♂ in Coll. Rothschild; Assam, Khásis, 1 ♂, 1 ♀. *Exp.* 42 millim.

3044. Ancara viridipicta.

Ancara viridipicta, Hmpsn. Journ. Bomb. Soc. xiv. p. 202, pl. B. f. 6 (1902).

♂. Head and tegulæ pale rufous mixed with white; extremity of 1st and 2nd joints of palpi white; upper part of frons and thorax pale moss-green; pectus, legs, and abdomen pale rufous mixed with white; tarsi ringed with white; abdomen with the dorsal crests on medial segments moss-green. Fore wing red-

brown; subbasal line brown, irregular, from costa to submedian fold, defined on each side by emerald-green and with green patch below the cell; antemedial line brown, waved, defined on each side by emerald-green, becoming white at costa; the medial area green with diffused irregular medial brown band and brown spots at upper and lower angles of cell; postmedial line double filled in with green, angled outwards below veins 8 and 7, incurved at discal fold, then dentate and incurved below vein 4, some white points beyond it on costa and some green beyond it below costa, at middle and inner margin; subterminal line represented by a dentate green line from costa to vein 5, angled outwards below vein 7, and a large irregular patch between veins 5 and 2; some dark points on termen with green points on their inner side. Hind wing red-brown, the basal inner area yellowish; some white striæ just before termen towards tornus; the underside yellowish with dark discoidal bar, postmedial line bent outwards below costa, then irregularly dentate, and diffused subterminal band.

♀. Upper part of frons white and emerald-green; thorax red-brown with patches of emerald-green on patagia and vertex; abdomen with the crests white, the basal crest tinged with emerald-green; fore wing with the green markings rather more developed, especially on inner medial area; hind wing with oblique sinuous postmedial line defined by whitish on outer side.

Hab. Assam, Khásis, 1 ♂ type; Borneo, Sandakan (*Pryer*), 1 ♀.
Exp. 46 millim.

Genus **SPEOCROPIA**, nov.

Type, *S. scriptura*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching vertex of head and moderately scaled, the 3rd long, frons with small conical prominence with raised edges and corneous plate below it; eyes large, rounded; antennæ of male laminate, almost simple, the basal joint with tuft of scales; head and thorax clothed chiefly with scales; pro- and metathorax with spreading crests; tibiæ very strongly tufted with hair; abdomen with dorsal crests on basal segments. Fore wing broad, the apex rounded, the termen crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base only.

A. Fore wing with black streaks in interspaces of terminal area above veins 4, 2, 1 ..... *scriptura.*
B. Fore wing with black streak on terminal area above vein 1 only ..... *trichroma.*
C. Fore wing without black streaks on terminal area.
  a. Hind wing wholly suffused with brown.
    a^1. Fore wing without white points on edges of stigmata... *ænyra.*
    b^1. Fore wing with white points on edges of stigmata ..... *leucosticta.*
  b. Hind wing white with terminal brown band.
    a^1. Fore wing with the orbicular and reniform defined by white points..... *randa.*
    b^1. Fore wing with the orbicular and reniform not defined by white points ..... *chromatica.*
  c. Hind wing pure white with fine interrupted red-brown terminal line ..... *eugrapha.*

3045. Speocropia scriptura.

Hadena scriptura, Wlk. xv. 1723 (1858).
Xylina transversalis, Wlk. xv. 1734 (1858).

♂. Head and thorax pale rufous with a few black scales; patagia tipped with black; tarsi banded with black; abdomen greyish tinged with rufous and fuscous. Fore wing pale rufous irrorated with fuscous; subbasal line double, waved, from costa to submedian fold where it is connected with base by a black streak; some blackish suffusion on basal inner area; antemedial line double, the outer line prominent, slightly angled outwards below costa, oblique to submedian fold, where it is connected with postmedial line by a black streak, then bent inwards to inner margin; claviform defined by black, short, acute at extremity; orbicular and reniform pale rufous defined by blackish, the former round; medial line represented by some dark suffusion from costa to reniform; postmedial line double, slightly bent outwards below costa, then minutely

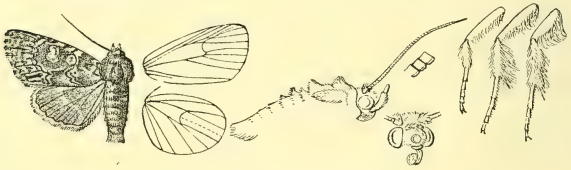


Fig. 38.—*Speocropia scriptura*.

dentate, obliquely excurved to vein 4, then oblique, some pale points beyond it on costa; the veins of terminal area with slight dark streaks and with black streaks in the interspaces above veins 5, 3 and 1, the last strongest; subterminal line pale, slightly defined on inner side by fuscous suffusion and excurved below vein 7 and at middle; a terminal series of black points connected by a fine waved line; cilia chequered rufous and fuscous. Hind wing brown with a rufous tinge, the basal and inner areas slightly paler; an indistinct curved postmedial line and fine waved black terminal line; the underside whitish, the costal and terminal areas irrorated with brown, a small discoidal spot, curved postmedial line, and diffused subterminal line.

♀. Fore wing with the black markings stronger, especially the streaks in interspaces of terminal area.

Hab. Haiti (*Tweedie*), 2 ♂, 2 ♀, type and type *transversalis*; Dominica (*Elliott*), 1 ♀. *Exp.* 36–46 millim.

3046. Speocropia trichroma. (Plate CXIV. fig. 24.)

Hadena trichroma, Herr.-Schäff. Corresp.-blatt. Regens. 1868, p. 116.

Head and thorax whitish tinged with red-brown and olive-green and irrorated with black; palpi blackish above; tarsi banded with

black; abdomen grey-white irrorated with fuscous, the dorsal crests blackish at tips. Fore wing pale greenish grey tinged with brown and irrorated and in parts suffused with fuscous, the medial area sometimes white below submedian fold; subbasal line oblique, black, sinuous from costa to vein 1 where there is a blackish streak; some blackish suffusion on basal inner area; antemedial line double, the outer line strong, oblique from costa to submedian fold where it is angled, and with a black streak from it to postmedial line, then bent inwards to inner margin; claviform absent; orbicular and reniform greenish grey irrorated with fuscous, undefined, the former rather elliptical, the latter constricted at middle; medial line represented by some dark suffusion from costa to reniform; postmedial line double, strongly bent outwards below costa, slightly oblique to vein 4, then oblique and sinuous, sometimes with some white suffusion at costa, some white points beyond it on costa, the veins of terminal area streaked with black, a strong black streak in submedian fold; subterminal line whitish defined on inner side by a fuscous patch at costa, then by some fuscous forming slight dentate marks, slightly excurved below vein 7 and at middle; a terminal series of small black lunules; cilia green mixed with black. Hind wing fuscous brown, the basal and inner areas white; traces of a postmedial line towards inner margin; cilia ochreous mixed with fuscous; the underside white, the costal area irrorated with brown, the apical area suffused with fuscous, a small discoidal spot and curved postmedial line from costa to vein 2.

Hab. Bahamas (*Bonhote*), 2 ♂, 1 ♀; Cuba, Santiago (*Schaus*), 3 ♂, 2 ♀. *Exp.* 30–34 millim.

3047. Speocropia ænyra.

Lepidodes ænyra, Druce, Biol. Centr.-Am., Het. i. p. 348, pl. 31. f. 6 (1889).

Nænia sabrella, Schaus, Pr. U.S. Nat. Mus. xxx. p. 98 (1906).

♀. Head and thorax rufous slightly mixed with dark brown; tarsi fuscous with slight pale rings; abdomen greyish irrorated with fuscous, the crests and anal tuft rufous. Fore wing rufous irrorated with blackish; a slight waved subbasal line from costa to submedian fold; some dark suffusion on base of inner margin; antemedial line indistinct, waved, oblique; claviform defined by black at extremity and below and with some dark suffusion from it to postmedial line; orbicular and reniform with slight pale punctiform annuli hardly defined, the former rather oblique elliptical; traces of a waved medial line oblique from costa to median nervure; postmedial line black, double at costa, bent outwards below costa, then minutely dentate, slightly incurved at discal fold, incurved below vein 4, some pale points beyond it on costa; subterminal line represented by a series of slight dentate ochreous marks with slight dark dentate marks before them towards costa and slight streaks from them to the ochreous points before the fine black

crenulate terminal line. Hind wing red-brown with indistinct sinuous postmedial line and fine dark terminal line; cilia with fine ochreous line at base; the underside ochreous, the costal and terminal areas irrorated with brown, a faint oblique antemedial line, black discoidal spot, irregularly crenulate postmedial line, diffused somewhat dentate subterminal line, and terminal series of small lunules.

Hab. Panama, Volcan de Chiriqui (*Champion*), 1 ♀ type; Brazil, Petropolis, type † ♀ *sabrella* in U.S. Nat. Mus. *Exp.* 42 millim.

3048. **Speocropia leucosticta,** n. sp. (Plate CXIV. fig. 25.)

Head and thorax red-brown mixed with pink and some ochreous, pectus clothed with ochreous hair; tarsi black ringed with pink; abdomen fuscous mixed with grey and with slight grey segmental lines, the crests red-brown mixed with pink, the ventral surface ochreous. Fore wing pinkish red thickly irrorated and suffused with dark brown, the veins streaked with purplish; subbasal line double, waved, from costa to vein 1, a white point on inner margin; antemedial line double, oblique, excurved in interspaces and angled inwards to white points on the veins, bent inwards to inner margin; claviform defined by whitish and black at extremity and with blackish patch between it and postmedial line; orbicular and reniform faintly defined by brown and with some ochreous points on their edges; the former rather constricted at middle; traces of a dark medial line oblique from costa to median nervure, then incurved; postmedial line double at costa, bent outwards below costa, then formed of small black lunules defined by pinkish on outer side and with a series of white points beyond it on the veins, incurved below vein 4, some pinkish points beyond it on costa; subterminal line represented by a series of slight pinkish and black marks in the interspaces; a terminal series of white points; cilia dark brown intersected with ochreous. Hind wing dark reddish brown, the base somewhat ochreous; postmedial and subterminal white and black striæ on veins 2 and 1; cilia ochreous mixed with dark brown; the underside ochreous white, the costal area irrorated with brown, the terminal area suffused with brown, an oblique antemedial line, small discoidal spot, crenulate postmedial line, and diffused subterminal band.

Hab. Venezuela, 1 ♂, 1 ♀ type. *Exp.* 40 millim.

*3049. **Speocropia randa.** (Plate CXIV. fig. 26.)

Nænia randa, Schaus, Pr. U.S. Nat. Mus. xxx. p. 98 (1906).

♀. Head and thorax red-brown mixed with ochreous and some white scales; palpi with the 2nd joint blackish at sides, the extremities of 2nd and 3rd joints and the lower part of frons yellowish white; tarsi blackish ringed with ochreous; abdomen whitish suffused with brown and with fine whitish segmental rings. Fore

wing red-brown thickly irrorated with ochreous white; subbasal line blackish defined by ochreous on outer side, waved, from costa to vein 1; antemedial line indistinct, dark with slight ochreous lunules on inner side, oblique, minutely waved; claviform defined by brown except above, with black-brown patch below and beyond it extending to postmedial line; orbicular and reniform very indistinctly defined by whitish points, the former rather oblique and constricted at middle; postmedial line represented by a double series of minute brown and ochreous-white lunules, bent outwards below costa, excurved to vein 4, then oblique, some ochreous points beyond it on costa; subterminal line ochreous white defined on each side by brown, minutely dentate and slightly angled inwards at discal and submedian folds; a fine waved dark terminal line with points in the interspaces; cilia red-brown intersected with ochreous. Hind wing yellowish white; the veins tinged with red-brown, the terminal area dark reddish brown; a sinuous brown postmedial line; dark brown and whitish subterminal points on vein 1 and inner margin; cilia yellowish white with a brown line through them except towards apex; the underside with the costal and terminal areas irrorated with red-brown, a discoidal point, sinuous postmedial line and diffused subterminal line.

Hab. TRINIDAD, type † ♀ in U.S. Nat. Mus. *Exp.* 34 millim.

3050. **Speocropia chromatica**, n. sp. (Plate CXIV. fig. 27.)

♂. Head and thorax rufous mixed with black; frons with lateral black bars; tarsi black with pale rings; abdomen grey mixed with rufous and black. Fore wing greyish rufous irrorated with black and suffused in parts with fuscous especially on medial area except at costa and inner margin; subbasal line black, double, waved; a blackish patch on inner area before the double minutely waved antemedial line; claviform small, defined by black except above; orbicular and reniform small, with pinkish annuli defined by black, the former defined at sides only and somewhat constricted at middle; a curved minutely waved black medial line; postmedial line double filled in with pinkish, the outer line indistinct except at costa, bent outwards below costa, then minutely waved, incurved below vein 5, some pinkish points with black streaks between them beyond it on costa; subterminal line represented by a series of small pinkish lunules defined on inner side by small somewhat dentate black marks and on outer by small spots, a terminal series of black points; cilia pinkish and fuscous. Hind wing white, the terminal area suffused with brown, the inner margin tinged with brown and with two small black marks above tornus; the underside white irrorated with a few black scales, a slight discoidal point, fuscous bar from middle of costa and traces of postmedial line from costa to vein 6.

♀. Hind wing ochreous white, the area beyond the cell and terminal area broadly suffused with brown.

Hab. Venezuela, Merida, ♀ in Coll. Dognin; Paraguay, Sapucay (*Foster*), 1 ♂ type. *Exp.* 34 millim.

3051. **Speocropia eugrapha**, n. sp. (Plate CXIV. fig. 28.)

♂. Head and thorax bright rufous mixed with some ochreous and dark brown; frons ochreous with lateral black bars; pectus and legs pale ochreous tinged with fuscous, the tarsi fuscous with pale rings; abdomen pale ochreous dorsally suffused with rufous. Fore wing ochreous suffused with bright rufous and thickly irrorated with dark red-brown, the veins with some purple scales; subbasal line dark brown, double, waved, from costa to vein 1, another waved line beyond it, angled outwards in submedian fold and ending at vein 1; antemedial line double, waved, oblique; claviform obscurely defined by brown except above, with some dark suffusion beyond and below it; orbicular a minute round dark brown annulus; reniform large, its centre and circumference irregularly defined by brown, some pale points on its outer edge; an indistinct dark rather irregular curved medial line; postmedial line double, bent outwards below costa, then waved, incurved below vein 4 and with another rather more regular line beyond it and some pale points on costa with short dark streaks between them; subterminal line indistinct, defined on inner side by small dentate dark marks, more prominent above veins 7, 6 and with double series of dark points on outer side; the interspaces of terminal area with slight dark streaks; a terminal series of dark striæ; cilia rufous mixed with some dark brown. Hind wing pure white, a slight red-brown line on termen between veins 4 and 2 and at tornus where there is a slight striga before it; the underside with the costa slightly tinged with ochreous.

Hab. Brazil, Castro Paraña (*D. Jones*), 1 ♂; Paraguay, Sapucay (*Foster*), 1 ♂ type. *Exp.* 26–30 millim.

Genus **CROPIA**.

	Type.
Cropia, Wlk. xiii. 1112 (1857)	*hadenoides*.
Decelea, Wlk. xiii. 1115 (1857)	*indigna*.
Listonia, Möschl. Abh. Senck. Ges. xiv. p. 37 (1888)	*infusa*.
Eudipna, Schaus, Pr. U.S. Nat. Mus. xxx. p. 97 (1906), nec Wlk.	*templada*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching vertex of head and moderately scaled, the 3rd long and dilated at extremity; frons smooth; eyes large, rounded; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibia thickly scaled; abdomen with dorsal series of crests, those at base and middle large. Fore wing broad, the apex rounded, the termen slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base only.

Sect. I. Antennæ of male bipectinate with moderate branches, the apical part serrate.

3052. Cropia subapicalis.

Decelea subapicalis, Wlk. xiii. 1117 (1857).

♂. Head, thorax, and abdomen reddish brown mixed with grey and some black; tarsi banded with black; abdomen with the dorsal crests more rufous, the ventral surface ochreous. Fore wing reddish brown irrorated with black and mixed with some white; a white point at base; subbasal line black, double, waved, from costa to vein 1, a black spot beyond its lower extremity; antemedial line double towards costa, angled outwards below costa, in submedian fold and above inner margin and inwards on vein 1; orbicular and reniform slightly defined by black and with some

Fig. 39.—*Cropia subapicalis*, ♂. ¾.

white points on their edges, the former rounded, the latter rather irregular and extending to below cell; an indistinct medial line oblique from costa to lower angle of cell, then waved; postmedial line indistinctly double, filled in with whitish, bent outwards below costa, then minutely waved, somewhat oblique to vein 4, then incurved, some white points beyond it on costa and a white patch from below costa to vein 5 with a minutely waved brown line near its outer edge; subterminal line white, fine, with black spots before it above veins 4 and 1 and streak beyond it above vein 4, excurved below vein 7 and at middle and angled inwards in discal fold; a terminal series of slight blackish lunules. Hind wing reddish brown; white and black striæ on vein 1 above tornus, some slight whitish subterminal marks towards tornus and others on termen; cilia white and brown; the underside whitish irrorated with brown, an indistinct oblique sinuous antemedial line, a discoidal lunule, crenulate curved postmedial line, and indistinct diffused subterminal band.

Hab. Haiti (*Tweedie*), 1 ♂ type. *Exp.* 40 millim.

Sect. II. (*Decelea*). Antennæ of male with short laminate branches.

3053. Cropia indigna.

Decelea indigna, Wlk. xiii. 1115 (1857).

Head and thorax rufous; tarsi fuscous with pale rings; abdomen

greyish ochreous with diffused purple-brown bands and rufous dorsal crests, the ventral surface pale ochreous. Fore wing rufous irrorated with large black scales, especially on postmedial area, the medial area purplish fuscous except towards costa; subbasal line represented by black striæ from costa and cell with some black points beyond it below the cell; antemedial line black, oblique from costa to submedian fold, then incurved; claviform faintly defined by fuscous; orbicular with faint pale annulus incompletely defined by black, round; reniform with slight pale centre defined by fuscous and white points on its circumference above and on outer side; an

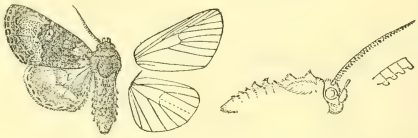


Fig. 40.—*Cropia indigna*, ♂. ½.

indistinct dark medial line oblique from costa to median nervure, then incurved; postmedial line blackish slightly defined by white on outer side, bent outwards below costa, incurved at discal fold, incurved and waved below vein 4, some pale points beyond it on costa; subterminal line ochreous defined on each side by brown, oblique towards costa, angled inwards at discal fold, then waved; a terminal series of blackish striæ; cilia rufous and blackish. Hind wing ochreous suffused with reddish brown; a discoidal lunule with dark line from it to inner margin; a sinuous postmedial line; a somewhat dentate ochreous subterminal line; a terminal series of blackish lunules defined on inner side by a pale waved line; cilia rufous and brown; the underside yellowish white irrorated with brown, a slight antemedial line, black discoidal spot, rather maculate postmedial line, and terminal series of points.

Hab. Cuba, Tanamo (*Schaus*), 1 ♀, Santiago (*Schaus*), 1 ♀; Haiti (*Tweedie*), 1 ♂, 1 ♀, type. *Exp.* 32–38 millim.

Sect. III. (*Listonia*). Antennæ of male bipectinate with very short branches, the apical part serrate.

A. Fore wing with the antemedial line white.
  a. Fore wing with subbasal black spot below the cell ..... *cedica*.
  b. Fore wing without subbasal black spot below the cell.
    a^1. Fore wing with double white postmedial line ..... *phila*.
    b^1. Fore wing with single white postmedial line ..... *plumbicincta*.
B. Fore wing with the antemedial line dark.
  a. Fore wing with the antemedial line angled outwards in submedian fold.
    a^1. Fore wing rufous suffused with silvery green; hind wing cupreous red ..... *viridimicans*.
    b^1. Fore wing suffused with leaden grey, the reniform with annulus of pink spots ..... *hadenoides*.

c^1. Fore wing not suffused with leaden grey or silvery green.
a^2. Fore wing irrorated with flesh-pink ..... *carnitincta.*
b^2. Fore wing red-brown suffused with blackish ..... *aleuca.*
b. Fore wing with the antemedial line oblique from costa to above inner margin, where it is angled.
a^1. Fore wing with black streak from lower angle of reniform to termen ..... *connecta.*
b^1. Fore wing without black streak from reniform to termen.
a^2. Fore wing without white patch on reniform or dark patch on postmedial part of costa ..... *infusa.*
b^2. Fore wing with white patch on reniform and dark patch on postmedial part of costa..... *poliomera.*
c. Fore wing with the antemedial line evenly curved ..... *minthe.*

3054. Cropia cedica.

Noctua cedica, Cram. Pap. Exot. iv. p. 42, pl. 310. f. E (1782).
Heterochroma rivulosa, Möschl. Verh. zool.-bot. Ges. Wien, xxxii. p. 355 (1882).
Dyops minthe, Druce, Biol. Centr.-Am., Het. i. p. 322 (part.).

♀. Head and thorax blackish brown mixed with red-brown; tarsi banded with blackish; abdomen fuscous brown, the crests rufous, the anal tuft ochreous at base, rufous at tip, the ventral surface ochreous. Fore wing red-brown irrorated with dark brown, a small white spot at base; subbasal line double, blackish, minutely waved, from costa to submedian fold, followed by a broad white band with some fuscous on it, from costa to just below vein 1, its edges waved, contracting towards costa and with a small deep black spot on its inner edge above vein 1; antemedial line double, blackish, filled in with white below the cell, excurved below costa, then oblique, angled outwards above inner margin; claviform represented by a slight brown mark; orbicular and reniform with slight ochreous annuli defined by brown, the former narrow, constricted at middle, medial line oblique from costa to median nervure, then inwardly oblique and angled outwards above inner margin; the veins of medial area finely streaked with white on inner half; postmedial line double, dark at costa, bent outwards below costa, then white, oblique to below vein 7, incurved at discal fold and below vein 4, some white suffusion beyond it with dark spots on it above and below veins 5 and 2 and some white points on costa; an indistinct pale waved subterminal line incurved at discal fold; a terminal series of small black spots in the interspaces and white points on the veins. Hind wing deep reddish brown with white striga on vein 1 above tornus, white patch at tornus and slight white marks on termen before the series of black striæ; cilia ochreous and brown, white at tornus; the underside yellowish white irrorated with dark brown, an oblique antemedial line, black discoidal lunule, irregularly crenulate postmedial line, and diffused subterminal line.

Hab. Guatemala (*Rodriguez*), 1 ♀; Surinam, 1 ♀. *Exp.* 42–46 millim.

3055. Cropia phila.

Dyops phila, Druce, Biol. Centr.-Am., Het. i. p. 322, pl. 29. f. 27 (1889).

♀. Head and thorax deep red-brown with a few white and black scales; tarsi banded with black; abdomen fuscous brown, the dorsal crests rufous, the ventral surface ochreous. Fore wing deep red-brown irrorated with dark brown, the veins finely streaked with white except on costal half before postmedial line; subbasal line indistinct, black, double, waved, from costa to vein 1, followed by a double bluish-white waved line with white patch on it between cell and submedian fold; a fine sinuous white antemedial line defined on each side by a few black scales, a slightly darker patch beyond it below submedian fold; orbicular and reniform with very indistinct undefined pale reddish annuli, the former rather oblique and constricted at middle; a waved medial line, oblique from costa to median nervure, then incurved; postmedial line double, black at costa, strongly bent outwards below costa, then bluish white, slightly incurved at discal fold, incurved below vein 4, some white points beyond it on costa; a dentate pale reddish and blue-white subterminal line, incurved at discal and submedian folds; a fine black terminal line with black spots in the interspaces and white points at the veins. Hind wing deep reddish brown overlaying ochreous; a sinuous postmedial line defined by pale colour on outer side and by white towards inner margin; some white subterminal marks towards tornus; a blackish terminal line slightly defined by greyish on inner side; the underside ochreous white irrorated with dark brown, an oblique sinuous antemedial line, black discoidal spot, irregularly crenulate postmedial line, and diffused subterminal band.

Hab. Panama, Bugaba (*Champion*), 1 ♀ type, Godman-Salvin Coll., Chiriqui; Br. Guiana, Berbice, 1 ♀; Brazil, Lr. Amazons, Onca I. (*Austen*), 1 ♀. *Exp.* 50–54 millim.

3056. Cropia plumbicincta, n. sp. (Plate CXIV. fig. 29.)

♀. Head and thorax red-brown mixed with grey and black; pectus and legs greyish, the tarsi banded with black; abdomen grey irrorated and obscurely banded with black. Fore wing grey tinged with brown and thickly irrorated with fuscous, the inner medial area blackish suffused with leaden grey; subbasal line represented by double black striæ from costa; antemedial line double at costa, angled outwards in cell, then oblique, waved, defined on inner side by blue-white and with some blue-grey suffusion before it between median nervure and vein 1; claviform small, indistinctly defined by black and with pale patch beyond it; orbicular and reniform indistinctly defined by white and black points, the former rather oblique elliptical, the latter constricted at middle; medial line indistinct, slightly sinuous, oblique from costa to lower angle of cell, then inwardly oblique; postmedial line double at costa, bent outwards below costa, then minutely waved,

defined by bluish white on outer side and with blue-grey suffusion beyond it, oblique to vein 4, then incurved, some pale points beyond it on costa; subterminal line indistinct, whitish defined on outer side by slight blackish marks, with black spot before it above vein 4 and streak beyond it, dentate, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules. Hind wing black-brown overlaying greyish, a postmedial greyish striga on vein 1, some subterminal marks towards tornus and some grey on termen before the slight black lunules; cilia greyish and black; the underside whitish irrorated with black, an oblique diffused antemedial line, discoidal spot, minutely crenulate postmedial line, and faint diffused subterminal band.

Hab. Paraguay, Sapucay (*Foster*), 1 ♀ type. *Exp.* 44 millim.

*3057. **Cropia viridimicans.** (Plate CXIV. fig. 30.)

Cropia viridimicans, Druce., A. M. N. H. (8) i. p. 296 (1908).

♀. Head white tinged with rufous; palpi and antennæ rufous; thorax rufous mixed with whitish; tarsi brown ringed with white; abdomen rufous, with whitish segmental rings. Fore wing rufous, suffused with pale silvery-green scales before and beyond the antemedial line, the costal part of postmedial line, and on terminal area, a whitish band beyond the medial line; subbasal line represented by a black striga from costa defined by white on outer side; antemedial line black, waved, angled inwards on vein 1; claviform absent; orbicular a small round rufous spot; reniform large, white, its centre slightly defined by rufous, rather constricted at middle; medial line blackish, from costa to median nervure; postmedial line black, bent outwards and interrupted by the white band below costa, then dentate, slightly incurved at discal fold and strongly below vein 4, some white points beyond it on costa; subterminal line rufous, waved, defined on outer side by brown and on inner by black lunules from costa to vein 2, excurved from below costa to vein 3; a terminal series of small black lunules; cilia rufous mixed with blackish. Hind wing cupreous red; a small oblique subterminal black bar defined by whitish on outer side and terminal series of small black lunules defined by whitish on inner side; cilia with fine whitish line at base; the underside whitish irrorated with rufous, the terminal area suffused with rufous, a brown discoidal spot; postmedial line bent outwards below costa, then crenulate, incurved at discal fold and below vein 3, angled outwards at vein 1.

Hab. Ecuador, Sarayacu (*Buckley*), type †♀ in Coll. Druce. *Exp.* 38 millim.

3058. **Cropia hadenoides.**

Cropia hadenoides, Wlk. xiii. 1112 (1857).
Dyops juba, Druce, Biol. Centr.-Am., Het. i. p. 321, pl. 29. f. 26 (1889).

♀. Head and thorax deep purplish brown; tegulæ with a few

black scales; tarsi banded with black; abdomen greyish brown, the ventral surface ochreous white. Fore wing brown suffused with leaden grey; subbasal line double, the inner line black, extending to vein 1, the outer waved and joining the inner at submedian fold; a striga from costa before the antemedial line which is waved; claviform defined by black except above, with a black streak from it in submedian fold to the postmedial line; orbicular and reniform defined by black, the former slightly constricted at middle and with a few pink scales on lower edge and white scales on upper, the latter with some pink and ochreous in centre and annulus formed of small pink spots, except above where there are some white scales; medial line oblique from costa to median nervure, incurved at vein 1; postmedial line double, slightly bent outwards below costa, then dentate, excurved to vein 4, then incurved, some silvery suffusion beyond it and some white points on costa; subterminal line pinkish, white at inner margin, slightly defined on each side by brown, excurved below vein 7 and at middle, angled inwards at discal fold; a black streak from postmedial line to termen on vein 5 and an irregular mark from it to termen in submedian fold; a terminal series of slight black lunules. Hind wing deep reddish brown overlying ochreous; a slightly waved dark postmedial line with white striga on it at vein 1 and another at tornus; some slight ochreous marks on termen; the underside ochreous white slightly irrorated with brown, an oblique antemedial line, small discoidal spot, curved crenulate postmedial line, and indistinct irregular subterminal line.

Hab. Panama, Chiriqui (*Champion*), 1 ♀ type *juba*, Godman-Salvin Coll.; Colombia, Bogotá (*Stevens*), 1 ♀ type. *Exp.* 40 millim.

3059. **Cropia carnitincta**, n. sp. (Plate CXIV. fig. 31.)

♀. Head and thorax red-brown mixed with pale ochreous; tarsi banded with fuscous; abdomen ochreous tinged with brown, the dorsal crests rufous. Fore wing pale pinkish irrorated and suffused with brown; an oblique black subbasal line from costa to submedian fold with faint waved line beyond it; an indistinctly double antemedial oblique line angled outwards in submedian fold; claviform defined by black below; orbicular and reniform with faint pale undefined annuli, both rather constricted at middle; a rather diffused black medial line, oblique from costa to vein 2 where it is angled outwards, then somewhat sinuous and with brown suffusion beyond it; postmedial line black defined by pink on outer side, double towards costa, bent outwards below costa, then minutely dentate, incurved below vein 4, some pale points beyond it on costa on a brown patch before the subterminal line, which is pinkish defined by brown on inner side, slightly incurved below costa, angled outwards at vein 6 and inwards in discal fold, excurved at middle and incurved at submedian fold, with slight black streaks before it in the interspaces except towards inner margin and

beyond it below veins 4 and 2; a series of black striæ just before termen on pinkish spots. Hind wing deep reddish brown, yellowish at base; a sinuous postmedial line defined by yellowish on outer side; some slight greyish subterminal marks towards tornus and slight marks on termen; cilia ochreous and brown; the underside yellowish white, the costal and terminal areas irrorated with brown, a diffused oblique antemedial line, discoidal spot, irregularly crenulate postmedial line, and diffused subterminal band.

Hab. Panama, Cana Mines (*Tylecote*), 1 ♀ type. *Exp.* 38 millim.

3060. Cropia aleuca, n. sp. (Plate CXIV. fig. 32.)

Dyops juba, Druce, Biol. Centr.-Am., Het. ii. p. 501 (nec i. p. 321).

♀. Head and thorax red-brown; tegulæ and patagia with a few black scales; tarsi banded with black; abdomen dark brown, ventrally ochreous. Fore wing red-brown irrorated with blackish, the veins and medial area except towards costa suffused with leaden fuscous; a white point at base; subbasal line represented by double black striæ from costa; a diffused black fascia above vein 1 extending to termen; antemedial line indistinctly double towards costa, oblique to submedian fold, angled inwards on vein 1 and outwards above inner margin; claviform slightly defined by blackish; orbicular and reniform with some greyish in centres and slight rufous annuli defined by black, the former rather oblique elliptical, the latter with straight inner edge; an indistinct medial line oblique from costa to lower angle of cell, then angled inwards in submedian fold and bent outwards to inner margin; postmedial line slightly bent outwards below costa, then minutely waved, oblique to vein 4, then incurved, a few white scales beyond it at inner margin; an indistinct reddish-ochreous band beyond it, defined by fuscous on outer side and dentate towards costa; subterminal line pale, slightly defined by brown on inner side, the area beyond it purplish fuscous, with black streaks beyond it in the interspaces, above vein 4 extending to postmedial line, excurved below vein 7 and at middle, angled inwards at discal and submedian folds; a terminal series of slight black lunules. Hind wing deep reddish brown with postmedial greyish mark on vein 1, slight subterminal marks towards tornus and fine waved black terminal line; the underside greyish irrorated with black, a diffused antemedial line, discoidal spot, crenulate postmedial line, and diffused subterminal band.

Hab. Costa Rica, Candelaria Mts. (*Underwood*), 1 ♀ type, Godman-Salvin Coll. *Exp.* 38 millim.

3061. Cropia connecta.

Chytonix connecta, Smith, Trans. Am. Ent. Soc. xxi. p. 42, pl. iv. f. 2 (1894); Dyar, Cat. Lep. N. Am. p. 107.
Dyops striata, Druce, Biol. Centr.-Am., Het. ii. p. 501, pl. 96. f. 5 (1898).

♀. Head and thorax reddish brown slightly irrorated with black and grey; pectus and legs greyish, the tarsi black with pale rings;

abdomen fuscous brown, the dorsal crests rufous, the ventral surface greyish. Fore wing pale brown, irrorated and in parts suffused with fuscous, especially on inner medial area; subbasal line double at costa, with a black streak from its extremity above vein 1; antemedial line indistinctly double towards costa, the outer line strong, minutely waved, excurved above inner margin; claviform slightly defined by fuscous, with a black streak from its lower extremity to postmedial line; orbicular and reniform rather pale defined by fuscous, the former round, the latter with traces of whitish annulus or pale points on its outer edge; a sinuous medial line oblique from costa to lower angle of cell, then inwardly oblique and angled inwards on vein 1; postmedial line indistinctly double, the inner line strong, slightly bent outwards below costa, then slightly waved, oblique to above vein 4, then filled in with white and incurved, crossed by a black streak from lower extremity of reniform to termen; the postmedial area with some white suffusion; subterminal line whitish, dentate, excurved below vein 7 and at middle, angled inwards at discal and submedian folds; a terminal series of slight black lunules. Hind wing deep fuscous brown, with pale postmedial striga on vein 1, some subterminal marks towards tornus and slight marks on termen before the fine terminal line; cilia whitish and fuscous; the underside grey-white irrorated with brown, an oblique antemedial line, discoidal lunule, irregularly crenulate postmedial line, and diffused subterminal band.

Hab. U.S.A., Texas; Mexico, Jalapa (*Trujillo*), 2 ♀ type, Godman-Salvin Coll.; Paraguay, Sapucay (*Foster*), 4 ♀. *Exp.* 42–46 millim.

*3062. **Cropia poliomera.** (Plate CXV. fig. 1.)

Cropia poliomera, D. Jones, Trans. Ent. Soc. 1908, p. 157.

♀. Head and thorax red-brown mixed with white; tegulæ white with faint pale rufous medial line; tarsi with slight pale rings; abdomen red-brown mixed with whitish. Fore wing red-brown with a silvery-grey gloss to postmedial line; the postmedial area greyish variegated with brown and with a dark brown patch on costal area, the terminal area brown irrorated with white; some whitish at base; subbasal line represented by indistinct double black striæ from costa and cell; a slight diffused black streak above vein 1 near base; antemedial line double filled in with greyish, angled outwards below costa, then minutely waved and oblique to above inner margin, then bent inwards; claviform small, indistinctly defined by black; orbicular defined by black and with faint greyish annulus, round; reniform white, ill-defined and with brown lunule on inner side of centre; medial line black, oblique from costa to median nervure, then inwardly oblique and slightly angled inwards in submedian fold; postmedial line double filled in with white, indistinct from costa to vein 3, bent outwards below costa, oblique to vein 6, then minutely dentate, slightly bent inwards at vein 3 and oblique to inner margin, some white points beyond it on

the dark costal patch; subterminal line whitish, defined on inner side by brown marks on inner half, waved, slightly angled outwards at vein 7 and incurved below vein 3; a terminal series of slight black lunules; cilia whitish and red-brown, with brown lines at middle and tips. Hind wing red-brown with traces of whitish postmedial line; a white bar defined above and below by dark brown above tornus; cilia white with a brown line through them; the underside white irrorated and suffused with red-brown, a slight discoidal spot and indistinct diffused waved postmedial line.

Hab. Brazil, Castro Paraña, type † in Coll. D. Jones. *Exp.* 42 millim.

3063. Cropia infusa.

Decelea infusa, Wlk. xiii. 1116 (1857).
Decelea bowreyi, Butl. P. Z. S. 1878, p. 486.
Listonia jamaicensis, Möschl. Abh. Senck. Ges. xiv. p. 38 (1888).

♂. Head and thorax red-brown mixed with some white and black scales; tarsi blackish with pale rings; abdomen red-brown, the ventral surface ochreous at base, then irrorated with dark brown. Fore wing red-brown mixed with pale rufous and slightly irrorated with black; a white point at base; subbasal line indistinctly double, waved, from costa to vein 1, with a small black spot beyond its lower

Fig. 41.—*Cropia infusa*, ♂. ½.

extremity; antemedial line indistinctly double, oblique, waved, angled outwards above inner margin; claviform represented by a slight black mark; orbicular and reniform with faint ochreous annuli incompletely defined by black and with some white points on their edges, the former rather oblique elliptical, the latter extending to below cell; an indistinct medial line oblique from costa to lower angle of cell, then incurved; postmedial line indistinctly double, filled in with whitish, bent outwards below costa, then minutely waved, rather oblique to vein 4, then incurved, some white points beyond it on costa and a grey-white rather lunulate patch from below costa to vein 5; subterminal line represented by a series of slight pale lunules defined on inner side by minute dentate black marks and a more prominent spot above vein 4; a terminal series of slight black lunules. Hind wing deep reddish brown with grey striga on vein 1 above tornus, grey subterminal mark towards tornus and some grey on termen; cilia grey and

brown; the underside purplish red irrorated with brown, an indistinct brown oblique antemedial line, a discoidal bar, curved minutely waved postmedial line, and diffused subterminal band.

♀. Fore wing with the inner half of medial area suffused with black, the inner side of antemedial line and outer side of postmedial line defined by white or pale ochreous suffusion, the subcostal lunulate patch absent.

Hab. ? Hab. 1 ♀ type; Jamaica (*Bowrey*), 1 ♀ type *bowreyi*; St. Lucia (*Cowie*), 4 ♂, 8 ♀. *Exp.* 34–42 millim.

3064. Cropia minthe.

Dyops minthe, Druce, Biol. Centr.-Am., Het. i. p. 322. pl. 29. f. 28 (1889).

♀. Head and thorax red-brown mixed with ochreous and white scales; 3rd joint of palpi and antennæ blackish; tarsi blackish with pale rings; abdomen red-brown, the ventral surface ochreous. Fore wing red-brown irrorated and in parts suffused with fuscous, especially on inner medial area; subbasal line represented by double black striæ from costa and a patch below the cell; antemedial line double at costa, then single, even and slightly excurved; traces of a small claviform defined by black; orbicular and reniform rufous slightly defined by brown, the former round, the latter with pale points on its edges; medial line oblique from costa to lower angle of cell, then strongly incurved and bent outwards to inner margin; postmedial line indistinctly double, bent outwards below costa, then oblique to vein 7 where it is angled, then filled in with white, incurved at discal fold, angled outwards at vein 4, then incurved; the postmedial area suffused with white and with some white points on costa; subterminal line white, dentate, excurved below vein 7 and at middle, angled inwards at discal and submedian folds, a black spot before it below vein 5 and a streak beyond it; a terminal series of small black lunules. Hind wing deep reddish brown; traces of a sinuous postmedial line; a white striga on vein 1 above tornus; a fine terminal black line with slight ochreous marks before it; the underside yellowish white irrorated with brown, an oblique brown antemedial line, discoidal lunule, crenulate postmedial line, and diffused subterminal band.

Hab. Panama, Chiriqui (*Champion*), 1 ♀ type, Godman-Salvin Coll. *Exp.* 40 millim.

Sect. IV. Antennæ of male with minute laminate serrations.

3065. Cropia templada.

Eudipna templada, Schaus, Pr. U.S. Nat. Mus. xxx. p. 97 (1906).

Head and thorax grey mixed with black; pectus ochreous; tarsi banded with fuscous; abdomen fuscous, the anal tuft ochreous, the ventral surface pale. Fore wing grey irrorated with fuscous; subbasal line double, from costa to vein 1; antemedial line double,

waved; claviform slightly defined by black; orbicular and reniform indistinctly defined by whitish and black points, the former round; medial line oblique from costa to lower angle of cell, then incurved; postmedial line double filled in with white, bent outwards below costa, then waved, oblique to vein 4, then incurved, some white points beyond it on costa; subterminal line white, with black spot before it above vein 4 and streak beyond it, dentate, angled outwards at vein 7 and inwards at discal fold, excurved at middle, then

Fig. 42.—*Cropia templada*, ♂. ½.

incurved; a terminal series of small black lunules. Hind wing deep reddish brown, with whitish postmedial mark on vein 1, some subterminal marks towards tornus, and some marks on termen before the waved black terminal line; cilia whitish and fuscous; the underside whitish irrorated with fuscous, an oblique antemedial line, discoidal spot, minutely waved postmedial line, and diffused subterminal band.

Hab. Mexico, Oaxaca, type † ♂ in U.S. Nat. Mus.; Guatemala city (*Rodriguez*), 1 ♂, 1 ♀, Godman-Salvin Coll. *Exp.* 38 millim.

Genus HETEROCHROMA.

Type.

Heterochroma, Guen. Noct. ii. p. 69 (1852)..... *eriopioides.*

Proboscis fully developed; palpi with the 2nd joint reaching about to vertex of head and moderately scaled, the 3rd moderate, upturned; frons rounded; eyes large, rounded; antennæ ciliated; head and thorax clothed chiefly with large rough scales, the pro- and metathorax with spreading crests; tibiæ fringed with hair; abdomen with large dorsal crests on basal segments. Fore wing with the termen crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Mid and hind tibiæ and 1st joint of tarsi of male fringed with very long hair.

3066. Heterochroma chloegrapha, n. sp.

♂: Head and thorax bright rufous mixed with ochreous and whitish; palpi pale in front; tegulæ with dark brown medial line; tufts on mid and hind tibiæ of male black-brown; tarsi ringed with whitish; abdomen red-brown, the dorsal crests tipped with grey,

the anal tufts rufous. Fore wing bright rufous mixed with some ochreous, the veins and interspaces of terminal area streaked with blackish, the termen suffused with leaden fuscous except at apex; subbasal line represented by double oblique black striæ from costa and single striga from cell, with green mark beyond them in cell; an oblique black streak on patch of red-brown suffusion on inner area before the antemedial line, which is black, double at costa, waved to median nervure, then excurved, angled inwards on vein 1 and outwards above inner margin; the medial area with diffused red-brown fascia in submedian fold; claviform defined by black, acute at extremity; orbicular and reniform slightly defined by black, large, the former with pale annulus, oblique elliptical, the latter with some deep red-brown in centre and green on outer edge, slightly angled inwards on median nervure and touching orbicular, expanding at lower extremity; an oblique dark bar from costa to reniform and oblique waved line from lower angle of cell to inner

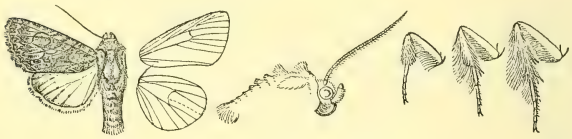


Fig. 43.—*Heterochroma chloegrapha*, ♂. ½.

margin; postmedial line black defined by ochreous on outer side, double at costa, bent outwards below costa, excurved to vein 5, incurved to reniform, angled outwards on vein 2, then incurved and waved, some white points beyond it on the veins and some pale points on costa, with slight green streak below them; subterminal line ochreous, defined on inner side by dentate deep red-brown marks, waved, excurved below vein 7 and at middle; the streaks in interspaces ending in small black spots, the extremities of veins with white points; cilia fuscous intersected with rufous and with rufous line at base. Hind wing white, the apical area suffused with rufous, a terminal series of rufous spots, the inner margin tinged with rufous; cilia with rufous spots from apex to vein 2; the underside with the costal area slightly irrorated with brown, the apical area strongly irrorated, a discoidal point, and waved curved postmedial line from costa to vein 4, followed by minute streaks on the veins.

Ab. 1. Fore wing with the terminal area less prominently streaked with black.

Hab. S.E. Peru, Oroya (*Ockenden*), 1 ♂ type, S. Domingo. *Exp.* 36–40 millim.

Sect. II. Legs of male normal.

A. Fore wing with the ground-colour brown.
  a. Hind wing yellowish white, the costal and terminal areas broadly brown.
    a^1. Fore wing with the postmedial line oblique and straight below vein 5 ..... *phytolacca.*
    a^1. Fore wing with the postmedial line incurved below vein 5 or 4.
      a^2. Fore wing with white line on outer edge of reniform ..... *bellona.*
      b^2. Fore wing with white spot on outer edge of reniform.
        a^3. Fore wing with the postmedial line acutely angled outwards at vein 5, then incurved..... *thermida.*
        b^3. Fore wing with the postmedial line excurved to vein 4, then incurved ..... *albipuncta.*
      c^2. Fore wing with ochreous annulus to reniform ... *insignis.*
  b. Hind wing wholly brown.
    a^1. Fore wing with white line on outer edge of reniform.
      a^2. Fore wing with the postmedial line minutely dentate, filled in with grey ..... *amphion.*
      b^2. Fore wing with the postmedial line evenly sinuous, white ..... *sarepta.*
    b^1. Fore wing without white line on outer edge of reniform.
      a^2. Fore wing with red patch defined by pink on inner margin beyond middle ..... *hypatia.*
      b^2. Fore wing with purplish-red patch on inner medial area ..... *eriopioides.*
      c^2. Fore wing without purplish-red patch on inner area.
        a^3. Fore wing with prominent green patch on inner margin before antemedial line..... *hadenoides.*
        b^3. Fore wing without green patch on inner margin.
          a^4. Fore wing with the lines not filled in with green ..... *luma.*
          b^4. Fore wing with the lines filled in with green. *chlorographa.*
B. Fore wing with the ground-colour green.
  a. Fore wing with the subterminal maculate line interrupted at vein 6 and between veins 4, 3 ..... *beryllus.*
  b. Fore wing with the subterminal line entire.
    a^1. Fore wing with white line on outer side of the maculate subterminal line, interrupted by rufous streaks at veins 6, 4, 3 ..... *lineata.*
    b^1. Fore wing with white striæ on outer side of the maculate subterminal line ..... *berylloides.*

3067. **Heterochroma phytolacca.** (Plate CXV. fig. 2.)

Noctua phytolacca, Sepp, Ins. Surin. p. 81, pl. 40 (1848).
Dargida singularis, Butl. Trans. Ent. Soc. 1879, p. 22.

♂. Head and thorax dark brown mixed with some purplish pink; palpi, pectus, and tarsi mostly ochreous; abdomen ochreous dorsally suffused with red-brown. Fore wing dark brown with a purplish gloss, the veins with fine pale streaks; subbasal line reddish ochreous defined on each side by blackish, sinuous, from costa to

vein 1; antemedial line ochreous slightly defined on each side by black, slightly angled outwards at subcostal nervure and submedian fold, strongly inwards on vein 1, then strongly excurved; claviform represented by a black patch with its upper edge indented; orbicular with slight pale annulus, rather oblique elliptical; reniform with slight pale annulus and prominent yellowish line on outer side concave towards base; traces of a waved black medial line; an ochreous streak below vein 7; postmedial line ochreous defined on each side by brown, bent outwards below costa, oblique to below vein 6, then inwardly oblique; some ochreous points beyond it on costa; subterminal line ochreous defined on inner side by slight dentate black marks, oblique from costa to vein 7, where it is bent outwards, angled inwards on vein 5, then somewhat dentate; a series of black points just before termen; a fine terminal black line interrupted by minute white points at the veins. Hind wing yellowish white, the costal and terminal areas broadly dark brown, the inner margin suffused with brown, the median nervure slightly streaked with brown; slight white subterminal points below vein 2 and on inner margin; a fine pale line at base of cilia; the underside white, the costal half irrorated with brown, an antemedial line from costa to discal fold, a discoidal spot, a maculate postmedial line from costa to discal fold, and spot below vein 2.

Hab. Surinam; Brazil, Amazons, Villa Nova (*Trail*), 1 ♂ type *singularis*. *Exp.* 36 millim.

Larva green; head with oblique black stripes; subdorsal lines dark green defined on each side by whitish; stigmata brown; lateral line dark green; extremity of claspers reddish. *Pupa* green, ventrally brown. Food-plant: *Phytolacca octandra*.

3068. Heterochroma bellona.

Phlegetonia bellona, Feld. Reis. Nov. pl. 112. f. 1 (1874).
Hadena metallica, H. Edw. Papilio, iv. p. 17 (1884).
Dargida singularis, Druce, Biol. Centr.-Am., Het. i. p. 270, nec Butl.

♀. Head and thorax dark brown mixed with purplish red; tarsi with slight pale rings; abdomen dark brown, the dorsal crests red-brown, the ventral surface ochreous and red-brown mixed. Fore wing purplish brown irrorated and in parts suffused with black-brown, the medial area suffused with black-brown except towards costa and inner margin; subbasal line double, waved, from costa to vein 1; a small metallic blue subbasal spot on inner margin; antemedial line double, angled outwards below costa, inwards in cell, then oblique to above inner margin where it is angled outwards; claviform represented by a black patch with greyish patch beyond it; orbicular and reniform greyish slightly defined by black, the former rather oblique elliptical with a few white scales on upper edge, the latter elliptical with yellowish white line on outer edge; traces of a waved medial line; postmedial line defined on each side by rufous, double at costa, bent outwards below costa, oblique to vein 6, excurved to vein 5, then oblique and

slightly incurved at vein 3, some rufous points beyond it on costa and a streak below vein 7; subterminal line purplish grey, dentate, defined on inner side by slight dentate black marks, angled outwards at vein 7; a series of small black spots just before termen with white striæ on their inner sides. Hind wing yellowish white, the costal and terminal areas broadly deep red-brown; some pale striæ near tornus; cilia ochreous with red-brown tips; the underside yellowish white, the costal and terminal areas suffused with purplish pink and irrorated with brown, a black antemedial line from costa to discal fold, discoidal annulus and irregularly crenulate postmedial line defined by yellowish on outer side.

Hab. Mexico, Coatepec (*Brooks*), 1 ♀; Costa Rica, Candelaria Mts. (*Underwood*), 1 ♀; Panama, Chiriqui (*Champion*), 3 ♀, Godman-Salvin Coll.; Fr. Guiana, type † ♂ in Coll. Rothschild. *Exp.* 40–44 millim.

3069. **Heterochroma thermida**, n. sp. (Plate CXV. fig. 3.)

♂. Head and thorax deep rufous to dark red-brown mixed with some black; frons with lateral black bars; tegulæ with some black scales near tips; patagia with black streak near upper edge; tarsi ringed with yellow; abdomen rufous mixed with yellowish. Fore wing deep rufous to dark red-brown irrorated with black, the medial area except towards costa and inner margin and the terminal area suffused with black; subbasal line double, black, waved, interrupted, from costa to submedian fold; antemedial line double, black filled in with rufous, angled outwards below costa and above inner margin, excurved in submedian interspace and angled inwards on vein 1; claviform short, defined by black; orbicular and reniform defined by black and with some white points on their annuli, the former round, the latter slightly angled inwards on median nervure and with white spot on its outer edge; an indistinct waved black medial line; postmedial line double, black filled in with yellowish rufous, bent outwards below costa, then dentate, angled inwards at discal fold and incurved below vein 5, some rufous points beyond it on costa; subterminal line pale rufous, defined on inner side by some small dentate black marks and interrupted by dentate black marks below veins 6, 4 and 2, excurved below vein 7 and at middle; a terminal series of small triangular black marks; cilia with a fine yellow line at base. Hind wing yellow tinged with rufous, the terminal area suffused with red-brown; a red postmedial line incurved at submedian fold; a blackish terminal line; cilia with a fine yellow line at base; the underside yellow, the costal and terminal areas irrorated and suffused with red-brown, a blackish discoidal spot, sinuous minutely waved postmedial line bent outward below costa, and terminal series of small lunules.

♀. Hind wing more uniform rufous.

Hab. Peru, Agualani (*Ockenden*), 1 ♂ type, Oconeque, Quinton. *Exp.* 40–46 millim.

*3070. Heterochroma albipuncta. (Plate CXV. fig. 4.)

Heterochroma albipuncta, D. Jones, Trans. Ent. Soc. 1908, p. 157.

♂. Head and thorax black-brown mixed with red-brown; tegulæ rufous at base with slight black medial line; pectus rufous; the extremities of tibiæ and the tarsi ringed with rufous; abdomen red-brown, pale at sides at base. Fore wing purplish fuscous mixed with rufous, irrorated and in parts suffused with black; the base of inner margin pale followed by a black patch with small bluish-white spot on it; subbasal line represented by indistinct double black striæ from costa and cell, with white point beyond it in cell; antemedial line double filled in with rufous, waved, somewhat oblique; the medial area with diffused black-brown fascia above vein 1 with bar from its upper edge between the very ill-defined claviform and a spot beyond it; orbicular very indistinct, oblique quadrate, defined at sides by black and a few white scales; reniform very indistinctly defined by black and a few white scales, rather elliptical, with small red spot on inner side of centre and prominent white spot on its outer edge; a diffused oblique black medial shade; postmedial line double filled in with red, bent outwards below costa, then minutely dentate, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line represented by a series of small somewhat dentate rufous marks defined on inner side by small dentate black marks and by a black shade at costa and streak below costa, with slight black streaks in the interspaces from it to termen with series of white points on them before termen. Hind wing yellowish white, the costal and terminal areas black-brown with a reddish tinge, the latter with sinuous inner edge with indistinct sinuous postmedial line just before it; a slight rufous bar with black points above and below it at tornus; cilia with a fine whitish line at base; the underside with the costal and terminal areas irrorated with black, the apical area tinged with red, a black discoidal spot with black bar from costa above it and minutely waved sinuous postmedial line.

Hab. Brazil, Castro Paraña, type † in Coll. D. Jones. *Exp.* 40 millim.

3071. Heterochroma insignis. (Plate CXV. fig. 5.)

Hadena insignis, Wlk. xi. 585 (1857).

Head and thorax purplish red mixed with black-brown; pectus with some ochreous hair; tarsi black with ochreous rings; abdomen dark reddish brown, the sides and ventral surface ochreous white except at extremity. Fore wing deep purplish brown irrorated with black and with slight reddish streaks in discal and submedian folds on postmedial area; subbasal line black, double, waved, from costa to vein 1; antemedial line double, waved, interrupted; claviform represented by an ill-defined black spot; orbicular very indistinctly defined by black, oblique; reniform small with rufous centre and slight yellowish annulus indistinctly defined by black; an

indistinct medial line oblique from costa to median nervure, then waved; postmedial line indistinct, double, bent outwards below costa, then dentate, incurved below vein 4, some reddish points beyond it on costa; subterminal line represented by a series of small reddish spots defined on inner side by small dentate black marks and with black streaks from them to the terminal series of small black spots, connected by a fine waved line. Hind wing yellowish white, the costal and terminal areas broadly dark brown with a reddish tinge; a fine pale line at base of cilia; the underside yellowish white, the costal and terminal areas irrorated with brown, a slight discoidal spot, faint postmedial line from costa to vein 5, and diffused subterminal line.

Hab. Jamaica (*Gosse*, *Kaye*), 1 ♂, 3 ♀ type, Runaway Bay (*Walsingham*), 1 ♂. *Exp.* 44–50 millim.

3072. Heterochroma amphion.

Dargida amphion, Druce, Biol. Centr.-Am., Het. i. p. 270, pl. 26. f. 15 (1889).

♀. Head and thorax dark brown mixed with purplish grey; palpi ochreous in front; tarsi with slight pale rings; abdomen reddish brown with some pale scales mixed. Fore wing dark brown suffused with purplish grey, the veins slightly streaked with grey; subbasal line grey slightly defined on each side by black, angled outwards below costa and on median nervure and ending at vein 1, a pale oblique striga beyond it across cell; a patch of green scales on inner margin before the antemedial line, which is double filled in with grey, angled outwards below costa, then oblique to above inner margin, where it is angled outwards; claviform represented by a black spot at its extremity; orbicular and reniform with grey annuli, the former narrow, oblique elliptical, pointed above, the latter oblique oblong with white line on its outer edge; traces of a waved blackish medial line; postmedial line double filled in with grey, angled inwards below costa, then bent outwards, excurved to vein 5, then incurved and minutely dentate, bent inwards to inner margin; postmedial area rather greyer with some white points on costa and on the veins beyond postmedial line; subterminal line grey defined on inner side by slight dentate dark marks, oblique and whitish from costa to vein 7 where it is angled outwards, angled inwards in discal fold and outwards on vein 4; a series of small black spots just before termen with white striæ on their inner side; a fine white line at base of cilia. Hind wing dark brown with a reddish tinge; a pale striga above tornus; a terminal series of dark lunules; cilia pale with a brown line near tips; the underside whitish, the costal and terminal areas irrorated with red-brown, an indistinct oblique irregular antemedial line, a discoidal spot, an irregularly waved postmedial line, and traces of a diffused subterminal line.

Hab. Guatemala, Volcan de Atitla (*Champion*), 1 ♀ type *Exp.* 42 millim.

3073. Heterochroma sarepta. (Plate CXV. fig. 6.)

Dargida amphion, Druce, Biol. Centr.-Am., Het. i. p. 270 (part).
Dargida sarepta, Druce, Biol. Centr.-Am., Het. i. p. 271, pl. 26. f. 16 (1889).

♀. Head and thorax dark brown mixed with some red-brown and greyish; tarsi black with pale rings; abdomen fuscous brown with the dorsal crests rufous; pectus and base of abdomen below with some pale rufous hair. Fore wing dark brown tinged with greyish; subbasal line represented by double black striæ from costa and cell; antemedial line slight, pale, defined on each side by slight black marks, angled outwards below costa, oblique to submedian fold, angled inwards on vein 1 and outwards above inner margin; claviform represented by a slight black mark; orbicular and reniform slightly defined by black, the former round, the latter with fine white line on its outer edge; an indistinct curved black medial line; the veins finely streaked with white from cell to postmedial line, which is white defined on each side by fine black lines, bent outwards below costa, oblique to vein 7, excurved to vein 5, then oblique sinuous, some whitish points beyond it on costa; subterminal line oblique and whitish from costa to vein 7 where it is angled outwards, then represented by slight dark marks in the interspaces; a series of small black spots just before termen with slight rufous striæ on their inner sides; a fine terminal dark line; cilia rufous mixed with black. Hind wing dark brown, the interspaces of basal half slightly paler; an indistinct curved postmedial line and pale striga above tornus; cilia ochreous mixed with brown; the underside whitish, the costal area irrorated with brown, the terminal area suffused with brown, a sinuous antemedial line, small discoidal spot, irregularly waved postmedial line, and diffused subterminal line.

Hab. Mexico, Coatepec (*Brooks*), 1 ♀, Godman-Salvin Coll.; Panama, Chiriqui. *Exp.* 36 millim.

3074. Heterochroma hypatia.

Thyatira hypatia, Druce, Biol. Centr.-Am., Het. i. p. 258, pl. 26. f. 4 (1889).

♀. Head and thorax white tinged with rufous; palpi with the basal half black, the 3rd joint with black ring at base; the mesothorax with black patch; abdomen whitish suffused with brown, leaving slight white segmental rings, the dorsal crests rufous, the anal tuft ochreous. Fore wing silky white, almost wholly suffused except on outer edge of antemedial line with olive-brown tinged with rufous in parts; the basal costal area black followed by some white partly tinged with pink; subbasal line represented by two black striæ from costa; a black spot on inner margin followed by a pinkish mark before the antemedial line, which is represented by two black striæ from costa, two waved striæ in cell, a bar from median nervure to a lunulate spot below submedian fold with a small triangular spot before it; orbicular absent; an oblique

U-shaped black mark defined by white with minute black streak below it, and oblique wedge-shaped black mark from costa above it before the reniform, which is very faintly defined by white and with some black scales on outer edge, its centre and the area just beyond it suffused with pink, a small triangular black spot above it from costa; an oblique sinuous brown line from below lower angle of cell to inner margin with semicircular rufous patch defined by pink beyond it on inner margin; postmedial line minutely waved, white defined on each side by black from costa to vein 5, the black on outer side expanding into a patch at costa and at vein 5 into an elongate mark, then defined on each side by pinkish, incurved below vein 2 and ending in a rather X-shaped mark above extremity of patch on inner margin; an ill-defined white subterminal line from below costa to vein 5, then bent inwards to the postmedial line and outwards to termen above tornus; some black striæ before termen below vein 6 and a white bar between veins 4, 3; a waved black terminal line except towards tornus. Hind wing whitish suffused with fuscous brown; the costal area and a broad subterminal band black; an indistinct oblique medial line from lower angle of cell to inner margin and minutely waved postmedial line incurved below vein 3; a pink and rufous patch on inner margin above tornus; a terminal series of black lunules; the underside white tinged with olive, the costal area strongly irrorated with black, a black discoidal spot, the medial and postmedial lines strong on costal area, the subterminal band formed of confluent striæ.

Hab. Panama, Bugaba (*Champion*), 1 ♀ type, Godman-Salvin Coll. *Exp.* 36 millim.

3075. Heterochroma eriopioides.

Heterochroma eriopioides, Guen. Noct. ii. p. 69, pl. 8. f. 8 (1852).
Hadena subapicalis, Wlk. xxxiii. 731 (1865).
Dargida porphyra, Druce, Biol. Centr.-Am., Het. i. p. 271, pl. 26. f. 17 (1887).

Head and thorax dark brown mixed with rufous; pectus with some ochreous and pinkish hairs; tarsi blackish with ochreous rings; abdomen reddish brown, the crests with dark tips, the anal tuft tinged with rufous. Fore wing rufous suffused and irrorated with dark brown; subbasal line double at costa and filled in with ochreous, then single, waved and with small white spot beyond it on inner margin; antemedial line double filled in with ochreous, waved; the medial area below vein 1 purplish rufous; claviform large, defined by black at extremity only; orbicular and reniform indistinctly defined by black, the former round, the latter with yellowish-white spot on its upper edge, with a point above it; a waved black medial line oblique from costa to median nervure and ending at vein 1; postmedial line strongly bent outwards below costa, then interrupted with an oblique ochreous streak from beyond upper angle of cell becoming rufous at extremity and with a slight black streak below its basal part, the line then represented by a

series of small black lunules defined by ochreous on outer side, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line represented by a series of slight ochreous marks in the interspaces with slight dentate blackish marks on

Fig. 44.—*Heterochroma eriopioides*, ♂. ½.

their inner side and black streaks from them to termen; an apical rufous patch; a waved black terminal line interrupted by white points at the veins; cilia brown mixed with ochreous. Hind wing brown with a reddish tinge; a faint curved postmedial line; a slight dark terminal line; cilia with a fine ochreous line at base; the underside ochreous irrorated with fuscous, a sinuous black antemedial line, a discoidal spot, an irregularly crenulate postmedial line with fuscous band beyond it, with waved outer edge, some dark points on termen.

Hab., Guatemala, Las Mercedes (*Champion*), 1 ♂ type *porphyra*; Panama, Chiriqui (*Ribbe*), 1 ♀, Godman-Salvin Coll.; Brazil, Neu-Fribourg, type † in Coll. Oberthür. *Exp.* 40–42 millim.

3076. Heterochroma hadenoides. (Plate CXV. fig. 7.)

Heterochroma hadenoides, Guen. Noct. ii. p. 70 (1852).

♂. Head and thorax red-brown; tegulæ with medial black line; patagia with black line near upper edge; tarsi banded with black; abdomen red-brown. Fore wing red-brown with a purplish tinge and irrorated with black; subbasal line represented by oblique double striæ from costa and cell; a short apple-green fascia on inner margin before the antemedial line, which is indistinct, dentate, with small black spot on it below median nervure; traces of a small round orbicular; reniform very ill-defined, fuscous grey with two greenish points on it surrounded by black scales; a prominent black-brown medial shade, excurved from costa to submedian fold where it emits a fascia to antemedial line, then reduced to a dentate line; postmedial line rather indistinct, double, bent outwards below costa, then dentate, oblique below vein 4; subterminal line represented by a series of dentate dark brown marks with greenish points on them before the terminal series of small black spots; cilia dark brown intersected with purplish pink. Hind wing ochreous suffused with red-brown, the terminal area darker; a dark streak on extremity of vein 2 and pale and dark marks above tornus; cilia ochreous with dark brown line through them and patches at middle

and tornus; the underside ochreous irrorated with red-brown, a small discoidal spot and irregularly waved postmedial line.

Hab. Brazil, Rio Janeiro (*Wilson*), 1 ♂. *Exp.* 36 millim.

3077. Heterochroma luma.

Dargida luma, Druce, Biol. Centr.-Am., Het. i. p. 271, pl. 26. f. 18 (1887).

♀. Head and thorax rufous slightly mixed with dark brown; tarsi with slight pale rings; abdomen fuscous brown with the crests rufous. Fore wing rufous irrorated with dark brown; subbasal line indistinct, double, waved, from costa to submedian fold; antemedial line indistinct, double, waved, angled inwards on vein 1 and outwards above inner margin; claviform slightly defined by black; orbicular and reniform slightly paler, indistinctly defined, the former rather oblique elliptical; an indistinct waved medial line; postmedial line double at costa, then single and faintly defined by ochreous on outer side, bent outwards below costa, excurved and somewhat dentate to vein 5, then strongly incurved, some pale points beyond it on costa and slight dark streaks in the interspaces between veins 7 and 4; subterminal line represented by a series of slight pale dentate marks defined on inner side by small dark dentate marks and with dark streaks in the interspaces from them to the terminal series of black points. Hind wing deep red-brown with curved postmedial line bent outwards to tornus, where there are black points on each side of it; cilia with a fine ochreous line at base; the underside ochreous irrorated with brown, the terminal area suffused with brown, a sinuous antemedial line, discoidal spot, irregularly crenulate postmedial line, and terminal series of points.

Hab. Guatemala, S. Gironimo (*Champion*), 1 ♀ type, Volcan de Atitlan (*Champion*), 1 ♀ Godman-Salvin Coll.; Br. Guiana (*Rodway*), 1 ♀; Brazil, Organ Mts., Tijuca (*Wagner*), 1 ♀. *Exp.* 40–42 millim.

3078. Heterochroma chlorographa, n. sp. (Plate CXV. fig. 8.)

♂. Head and thorax rufous mixed with ochreous and some black scales; tegulæ with emerald-green medial band, patagia with some emerald-green at base; pectus, legs, and abdomen rufous, the tarsi banded with black. Fore wing rufous with slight dark irroration, the antemedial area and outer part of medial area suffused with purplish pink and violaceous grey; subbasal line double, black filled in with emerald-green, waved, from costa to vein 1; antemedial line double filled in with green, incurved in cell, then excurved; claviform large, defined by green and black; orbicular and reniform large, the former rather oblique elliptical with rufous centre defined by some black scales and green annulus defined by blackish, confluent with a small green spot on its upper edge and on inner side with the antemedial line, the latter with pink centre and green annulus, obsolescent except on inner side where there is a black line expanding into a spot below between the annulus and centre, angled inwards on median nervure and touching the orbicular, with some

black suffusion between them in cell; traces of a waved medial line; postmedial line double filled in with green except at middle, bent outwards below costa, then waved, excurved to vein 4 near subterminal line, then oblique and angled inwards on vein 1, some pale points beyond it on costa; subterminal line green, minutely and irregularly waved, angled inwards at vein 7 and in submedian fold, with some black scales on inner edge and blackish suffusion beyond it on apical half and green on inner half; a terminal series of small blackish lunules; cilia brown with a blackish line through them, intersected with green on inner half. Hind wing red-brown; cilia ochreous; the underside pink irrorated with black, a large black discoidal spot and crenulate postmedial line.

Hab. Ecuador (*Buckley*), 1 ♂ type. *Exp.* 44 millim.

3079. **Heterochroma beryllus.** (Plate CXV. fig. 9.)

Valeria beryllus, Guen. Noct. ii. p. 51, pl. 8. f. 7 (1852); Druce, Biol. Centr.-Am., Het. i. p. 292.
Hadena viridis, H. Edw. Papilio, iv. p. 17 (1884).

Head and thorax red-brown mixed with pinkish and some black scales; tegulæ with diffused medial green line, patagia and metathorax with green patches; pectus, legs, and abdomen red-brown mixed with ochreous, the tarsi ringed with ochreous, the dorsal crests pale rufous. Fore wing olive-green irrorated with black and suffused with red-brown between subcostal nervure and vein 1 except on terminal area, the veins irrorated with white scales; subbasal line represented by double black striæ filled in with green from costa and median nervure; a black spot defined on each side by green before the antemedial line, which is black defined on each side by green, double at costa, angled outwards below costa, inwards in cell and outwards above inner margin, to which it is strongly retracted; claviform very large, defined by white and black and intersected by green at middle; orbicular and reniform with brown centres and fine white annuli defined by black, the former conical, open below, the latter large, produced at extremities and angled inwards on median nervure; medial line oblique from costa to median nervure, then dentate; postmedial line black defined on each side by green, double at costa, strongly bent outwards below costa, then minutely dentate, angled inwards at discal fold, oblique below vein 4 and angled outwards on vein 1, some pale points beyond it on costa; subterminal line rather broad, white with dentate black marks on its inner side, slightly excurved at middle, then oblique, interrupted by rufous on each side of vein 6 and between veins 4, 3; a terminal series of black lunules; cilia grey intersected by green and with a black line through them. Hind wing yellowish, the costal and terminal areas very broadly red-brown; a waved dark terminal line; cilia yellow with a brown line through them; the underside yellow, the costal and terminal areas tinged with pink and irrorated with brown, a black discoidal spot and curved crenulate postmedial line.

Ab. 1. Fore wing with the white subterminal line crenulate.—Panama.

Hab. Mexico, Jalapa (*Trujillo*), 1 ♀; Guatemala, Cerro Zunil (*Champion*), 1 ♀; Panama, Chiriqui (*Champion*), 1 ♀, Godman-Salvin Coll.; Brazil, Neu-Fribourg; S.E. Peru, S. Domingo, 1 ♂, 1 ♀. *Exp.* 44–50 millim.

3080. Heterochroma lineata.

Dargida lineata, Druce, Biol. Centr.-Amer., Het. ii. p. 475, pl. 93. f. 18 (1898).

Head and thorax red-brown mixed with some black; palpi with the extremity of 2nd and 3rd joints pale; vertex of head with two black spots; tegulæ with olive-green medial band defined by black scales; patagia with olive-green patches; tarsi slightly ringed with white; abdomen rufous, the extremity irrorated with grey. Fore wing red-brown irrorated and suffused with black, the costal and terminal areas green; subbasal line represented by double black striæ from costa and cell filled in with green; a black streak above inner margin near base with some green above it and ochreous below it; antemedial line defined on each side by green, double at costa, oblique to vein 1, then angled outwards above inner margin; claviform short and broad, defined by green and black at extremity and below; orbicular and reniform defined by green at side, the former oblique oblong, angled outwards at lower extremity, the latter with ochreous and rufous lunule in centre, angled inwards at lower extremity to near orbicular; a faint oblique dark line from lower angle of cell to inner margin, angled outwards on vein 1; postmedial line double filled in with green, bent outwards below costa, oblique to vein 6, inwardly oblique below vein 4 and angled outwards on vein 1, some whitish points beyond it on costa and dentate rufous marks on veins 6, 4, 3, interrupting the slightly curved yellowish-white subterminal line, angled inwards in submedian fold and with black patches, before it from costa to vein 6 and between veins 6 and 4, then small dentate spots to inner margin; a terminal series of prominent black lunules; cilia ochreous and black with fine pale line at base. Hind wing with the basal half ochreous, the veins red-brown, the terminal half red-brown; a fine dark terminal line; cilia ochreous tinged with rufous and with red-brown line through them; the underside ochreous tinged with rufous and irrorated with brown, a large black-brown discoidal lunule, and minutely waved postmedial line excurved to vein 3 then incurved.

Hab. Mexico, Orizaba, type † in Coll. Druce; S.E. Peru, S. Domingo, 1 ♀. *Exp.* 44 millim.

3081. Heterochroma berylloides, n. sp. (Plate CXV. fig. 10.)

♂. Head and thorax rufous; palpi dark-brown at sides; tegulæ rufous at base followed by some green scales, the tips dark brown mixed with black; patagia with green patches edged by black and

with some black at middle; fore and mid tibiæ with some green; abdomen rufous. Fore wing bright moss-green with patches of red-brown suffusion irrorated with black on antemedial, medial and postmedial areas; subbasal line represented by double black striæ from costa and cell filled in with green; antemedial line defined on each side by green, oblique, waved, bent inwards to inner margin; orbicular and reniform with green annuli, the former elliptical with brown centre defined by black, the latter large with some brown in lower part and small black spot near lower inner edge which is almost straight; postmedial line defined on each side by green, bent outwards below costa, then minutely waved, slightly incurved at discal fold, incurved below vein 4 and angled outwards on vein 1, a blackish patch beyond it in submedian interspace and some white points on costa; subterminal line formed of slight white striæ with series of dentate black marks before it in the interspaces, incurved and with white spot at submedian fold; a crenulate black terminal line with lunules in the interspaces; cilia green with series of black spots at tips. Hind wing red-brown; cilia ochreous mixed with red-brown; the underside yellowish suffused with pink and irrorated with black, a large black discoidal spot and curved minutely crenulate postmedial line.

♀. Tegulæ with the terminal half green; abdomen with the dorsal crests tipped with green.

Hab. Jamaica (*Sturridge*), 1 ♂, 2 ♀ type, Cinchona (*Kaye*), 1 ♂. *Exp.* 46–50 millim.

Genus ATREPHES, nov.

Type, *A. albiluna*.

Proboscis aborted, minute; palpi obliquely upturned, the 2nd joint reaching about middle of frons and thickly scaled, the 3rd short; frons with small conical prominence with raised edges and corneous plate below it; eyes large, rounded; antennæ of male typically bipectinate with short branches to apex; head and thorax clothed almost entirely with scales, the prothorax with divided crest, the metathorax with spreading crest; tibiæ thickly fringed with hair; abdomen with dorsal series of crests, the crest on 3rd segment large. Fore wing broad, the apex rounded, the termen slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the rather long areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 stalked; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with short branches to apex.

3082. Atrephes albiluna, n. sp.

Head and thorax clothed with red-brown, grey, and black scales; tegulæ with whitish tips; tarsi with pale rings; abdomen grey-brown, the ventral surface whitish. Fore wing purplish grey-brown irrorated with white, the veins suffused with greenish fuscous, the basal inner area reddish; subbasal line represented by a slight black striga from costa; antemedial line oblique, waved; claviform small, defined by some small black scales; orbicular and reniform rather small, with very incomplete annuli of white scales partially

defined by black, the former round, the latter with prominent white lunule on its outer edge; an indistinct waved medial line oblique from costa to median nervure; postmedial line double at costa, bent outwards below costa, then minutely dentate, oblique below vein 4, some white points beyond it on costa; subterminal line greyish

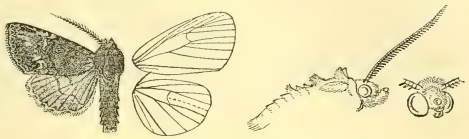


Fig. 45.—*Atrephes albiluna*, ♂. ½.

white, with black streak before it below costa, then with dentate black marks before and beyond it increasing in size towards inner margin, slightly excurved below vein 7 and at middle; a terminal series of small black lunules with white striæ before them; cilia fuscous and grey. Hind wing fuscous brown, the interspaces of basal half whitish; a sinuous postmedial line defined by whitish on outer side; cilia whitish with a dark line near base; the underside white, the costal and terminal areas irrorated with fuscous, the veins streaked with fuscous towards termen, a black discoidal lunule, curved sinuous postmedial line, and traces of diffused subterminal line.

Hab. Brazil, Porto Alegre (*Schmitt*), 2 ♂, 1 ♀ type. *Exp.* 36 millim.

Sect. II. Antennæ of male serrate.

*3083. Atrephes phocea.

Atrephes phocea, D. Jones, Trans. Ent. Soc. 1908, p. 163.

♂. Head and thorax pale red-brown mixed with some white scales; tarsi slightly ringed with white; abdomen whitish suffused and irrorated with pale red-brown. Fore wing pale glossy red-brown mixed with greyish; subbasal line represented by slight blackish points below costa and cell; antemedial line indistinct,

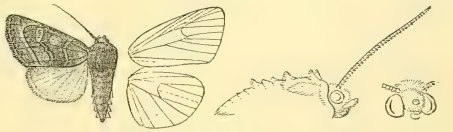


Fig. 46.—*Atrephes phocea*, ♂. ½.

blackish, rather diffused, oblique from costa to median nervure, angled outwards and defined by greyish on inner side above inner margin; claviform a minute blackish mark; orbicular hardly traceable, faintly defined by brown, round; reniform indistinct greyish, slightly defined by brown, angled inwards on median

nervure; postmedial line blackish defined by white on outer side, bent outwards below costa, excurved to vein 4, then oblique, some pale points beyond it on costa; a subterminal line represented by a series of faint whitish striæ defined on inner side by slight dark spots; a terminal series of slight dark lunules; cilia with fine whitish line at base. Hind wing yellowish white, the termen slightly tinged with red-brown; a terminal series of slight brown lunules; cilia with a red-brown line through them; the underside with the costal area slightly tinged and irrorated with red-brown, a brown discoidal spot and traces of a curved postmedial line.

Hab. Brazil, Castro Paraña, type† in Coll. D. Jones. *Exp.* 32 millim.

Genus **EUCROPIA**, nov.

Type, *E. pallirena*.

Proboscis aborted, small; palpi upturned, the 2nd joint reaching about middle of frons and moderately scaled, the 3rd short; frons with rounded prominence with vertical ridge at middle; eyes large, round; antennæ of male bipectinate with moderate branches, the apex simple; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests (fore and mid legs wanting); hind tibiæ moderately fringed with hair; abdomen with dorsal series of crests. Fore wing with the apex rounded, the termen evenly curved, crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

*3084. Eucropia pallirena.

Hadena pallirena, Feld. Reis. Nov. pl. 110. f. 9 (1874).

♂. Head and thorax dark red-brown mixed with some pale rufous; abdomen pale rufous. Fore wing rufous suffused with fuscous to reniform and below the cell to postmedial line, leaving the inner margin rufous and emitting a fuscous streak from lower angle of cell to termen; subbasal line waved, from costa to submedian fold; antemedial line waved, angled inwards on vein 1 and

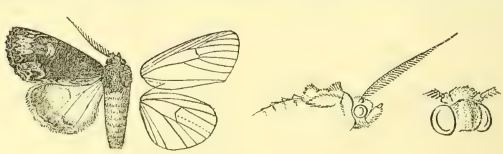


Fig. 47.—*Eucropia pallirena*, ♂. ½.

outwards above inner margin; claviform short, defined by black; orbicular and reniform well-developed, incompletely defined by black and white scales, the former round, the latter rather concave towards base and with an ochreous lunule on its outer edge; a fuscous medial line angled at lower angle of cell; postmedial line

minutely dentate, bent outwards below costa, excurved to vein 4, then oblique, the area beyond it pale rufous to the waved ochreous subterminal line, which is defined on inner side by a black patch at costa and slight dentate marks on inner half, the one in submedian fold large; a terminal series of small black lunules. Hind wing ochreous white, the costal and terminal areas suffused with rufous; a diffused blackish mark at tornus; the underside whitish, the costal area irrorated with brown, a small discoidal spot, incomplete minutely waved postmedial line, and diffused subterminal line towards apex and tornus.

Hab. VENEZUELA, type † ♂ in Coll. Rothschild. *Exp.* 34 millim.

Genus **PERIGEODES**, nov.*

Type, *P. rectivitta*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching vertex of head and moderately scaled in front, the 3rd rather long; frons smooth; eyes large, rounded; head and thorax smoothly clothed with scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with small dorsal crests on basal segments. Fore wing with the apex rectangular, the termen evenly curved and slightly crenulate, the cilia strongly dentate especially towards tornus; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with large white patch on inner medial area extending nearly to cell ..... *poliomera.*
B. Fore wing without white patch on inner area extending nearly to cell.
  a. Fore wing with white patch beyond postmedial line between veins 4 and 2..... *lignigera.*
  b. Fore wing without white patch beyond postmedial line between veins 4 and 2.
    a^1. Fore wing with the lower part of reniform very large and extending to well below cell ..... *tricycla.*
    b^1. Fore wing with the lower part of reniform moderate and extending to slightly below cell.
      a^2. Fore wing with bifid black spot beyond lower part of reniform.
        a^3. Fore wing yellow, the antemedial line almost obsolete, the stigmata defined by black points ..... *magna.*
        b^3. Fore wing ochreous suffused with rufous, the antemedial line double, the stigmata with pale annuli.. *malayica.*
      b^2. Fore wing without bifid black spot beyond lower part of reniform ..... *rectivitta.*

3085. **Perigeodes poliomera**, n. sp. (Plate CXV. fig. 11.)

Head, tegulæ, and patagia ochreous tinged with rufous, the tegulæ with darker edges; palpi black above, white below; frons with black bar; vertex of thorax, pectus and legs white, the fore legs

* The genera *Perigeodes* and *Perigea* would perhaps be better placed as derived from *Hadjina*.

tinged with brown, the tarsi fuscous ringed with white: abdomen white tinged with brown, the basal crest black at tip. Fore wing ochreous tinged with rufous, the area below costa paler, becoming pure white at apex, a large white patch on inner area from near base to near tornus, rounded above, the terminal area redder to the oblique streak from termen just below apex, suffused with black towards tornus; the base white; traces of a double waved subbasal line from costa to submedian fold; a very indistinct double waved antemedial line, obsolete on the white area; orbicular and reniform with whitish annuli slightly defined by brown, the former with brown centre, round, the latter with its centre defined by black points, constricted at middle; a blackish patch beyond lower angle of cell; postmedial line double, almost obsolete towards costa, strongly bent outwards below costa, then oblique, minutely waved and with series of black and white points on its outer edge, bent outwards to inner margin at extremity of the white patch, some slight pale points beyond it on costa; traces of a waved subterminal line; a terminal series of black points with white point before the point in submedian interspace; cilia reddish with series of black points at tips; wholly black towards tornus. Hind wing pale brown with terminal series of small dark lunules; cilia brownish white: the underside whitish, the costal area tinged with rufous, an indistinct diffused dark subterminal band from costa to vein 2, a terminal series of black points.

Hab. C. China, Ichang (*Hobson*), 1 ♂; Hainan, Five-Fingered Mts. (*Whitehead*), 2 ♀; Assam, Khásis, 1 ♀ type. *Exp.* ♂ 32, ♀ 36 millim.

*3086. Perigeodes lignigera.

Rusicada lignigera, Wlk. Journ. Linn. Soc. vii. p. 78 (1864); Swinh. Cat. Het. Mus. Oxon. ii. p. 57, pl. 1. f. 8.

♀. Head and thorax ochreous tinged with rufous; abdomen ochreous tinged with brown. Fore wing ochreous tinged with rufous, more strongly on inner area except at base and on terminal area below the diffused oblique rufous striga from termen just below apex to lower angle of cell, the tornus suffused with fuscous; a grey-white patch on middle of inner area and a larger patch on middle of terminal area; subbasal and antemedial lines represented by oblique rufous striæ from costa; stigmata obsolete; medial line rufous, diffused, oblique from costa to lower angle of cell, then darker and inwardly oblique to inner margin before the white patch; two slight blackish marks beyond lower angle of cell; a pale mark on termen above tornus; cilia pale rufous on apical half, darker on inner half. Hind wing ochreous, the terminal half suffused with purplish red.

Hab. Borneo, Sarawak (*Wallace*), type † ♀ in Mus. Oxon. *Exp.* 38 millim.

3087. Perigeodes tricycla. (Plate CXV. fig. 12.)

Perigea tricycla, Guen. Noct. i. p. 226 (1852); Hmpsn. Moths Ind. ii. p. 319.
Bagada fuscostrigata, Beth.-Baker, Nov. Zool. xiii. p. 209 (1906).

♂. Head and thorax pale ochreous mixed with dark brown and tinged with rufous; palpi with some dark brown at side of 2nd joint; antennæ brown; abdomen pale ochreous tinged with rufous, dorsally dark brown except at base. Fore wing pale ochreous suffused with rufous and slightly irrorated with dark brown, the inner margin with fuscous-brown fascia tinged with grey except at base, the postmedial area greyish brown except towards costa, terminated by the oblique dark brown streak from apex to postmedial line at vein 5, diffused below; subbasal line represented by two black points below the cell; antemedial line very indistinct, double, rufous, minutely dentate, below vein 1 strongly bent inwards to inner margin; claviform represented by a dark striga at its extremity; orbicular pale, defined by brown except above, irregularly rounded; reniform pale, slightly defined by brown, strongly constricted at middle and figure-of-8-shaped, extending well below the cell to vein 2, some dark points in its lower part, traces of an oblique line from it to inner margin; postmedial line indistinct, double, strongly bent outwards below costa, then minutely waved and oblique, some pale points beyond it on costa; subterminal line very indistinct, pale, defined on inner side by brown suffusion, slightly excurved below vein 7 and at middle; a terminal series of dark points defined on inner side by pale lunules; cilia dark brown with a pale line at base. Hind wing dark brown with a reddish tinge; cilia with a pale line at base: the underside whitish tinged with brown, the terminal area suffused with brown, a brown postmedial line from costa to vein 5.

Ab. 1. *fuscostrigata*. Hind wing on underside much more suffused with brown, a small dark discoidal spot, the postmedial line entire.

Hab. Assam, Khásis; Borneo, Kuching (*Shelford*), 1 ♂; Br. N. Guinea, Ekeikei (*Pratt*), type † ♂ *fuscostrigata* in Coll. Bethune-Baker. *Exp.* 42–44 millim.

3088. Perigeodes magna. (Plate CXV. fig. 13.)

Xanthoptera magna, Hmpsn. Moths Ind. ii. p. 320 (1894); Swinh. A. M. N. H. (6) xv. p. 6 (1895).

♀. Head and thorax ochreous suffused with rufous, the vertex of thorax grey mixed with brown; palpi blackish, grey in front; frons with lateral black bars; antennæ blackish; pectus and legs ochreous mixed with grey and brown; tarsi brown; abdomen greyish suffused with brown, the crests black and grey at tips. Fore wing olive-ochreous tinged with rufous except towards costa, the postmedial and terminal areas purplish red, terminated above by the oblique red streak from apex to postmedial line at vein 6, the

inner margin with a brown fascia except towards base with some diffused white on it along vein 1 except towards tornus; subbasal line indicated by a few black scales, the antemedial line by double black points on the veins with some white scales between them; claviform absent; orbicular and reniform indicated by some minute black points on their edges; a black spot beyond the cell above and below vein 4, with traces of an oblique line from it to vein 1; postmedial line obsolete towards costa, then represented by an oblique double series of black points on veins 6 to 1 with white points between them; subterminal line represented by faint whitish marks in the interspaces below vein 6; a terminal series of black points; cilia rufous, black towards tornus. Hind wing brown with a reddish tinge; cilia rufous, pale at tips; the underside greyish, the costal area irrorated with brown, the terminal area suffused with rufous, a slight discoidal lunule defined by brown, an oblique crenulate postmedial line and diffused subterminal shade.

Hab. Bhutan (*Dudgeon*), 1 ♀; Assam, Khásis, 1 ♀ type. *Exp.* 38–44 millim.

3089. Perigeodes malayica. (Plate CXV. fig. 14.)

Orthogonia malayica, Snell. Veth's Midden-Sumatra, Lep. p. 46, pl. iv. f. 6 (1892).

Xanthoptera nigridia, Hmpsn. Moths Ind. ii. p. 320 (1894); Swinh. A. M. N. H. (6) xv. p. 7 (1895).

Head and tegulæ ochreous mixed with fuscous; palpi fuscous at sides, the tegulæ with slight fuscous annuli; thorax pale rufous with some fuscous scales on vertex; pectus ochreous; tarsi blackish ringed with white; abdomen purplish red, the base brownish white, the basal crest blackish, the ventral surface ochreous white irrorated with fuscous. Fore wing ochreous suffused with red-brown, the costal area paler, the area beyond the postmedial line to the oblique blackish streak from termen just below apex dark; some whitish on medial part of inner margin, the male much darker; subbasal line represented by faint double striæ from costa; antemedial line very indistinct, double, bent inwards to costa, then minutely waved and with black and white points before it on median nervure and vein 1; claviform represented by a slight dark point at its extremity; orbicular and reniform pale faintly defined by brown and their centres by black points, the former somewhat oblique elliptical, the latter large and constricted at middle; a brown medial shade, oblique from costa to reniform, inwardly oblique below the cell; a blackish patch beyond lower angle of cell; postmedial line double, indistinct towards costa, strongly bent outwards below costa, then oblique, its inner part minutely dentate, a series of black and white points beyond it on the veins and some pale points on costa; subterminal line slightly defined by brown on inner side and by blackish towards inner margin, angled outwards at vein 7, then somewhat dentate, incurved at submedian fold, a terminal series of black points; cilia red-brown mixed with

black towards apex and tornus. Hind wing purplish pink suffused with fuscous brown, in male wholly suffused with fuscous; cilia purplish pink; the underside purplish pink, the basal and inner areas pale, a slight crenulate postmedial line from costa to vein 5 with white and fuscous irroration beyond it.

Hab. Sikhim (*Dudgeon*), 1 ♀; Bhutan (*Dudgeon*), 2 ♀; Assam, Khásis, 1 ♂, 1 ♀, type *nigridia*; Singapore (*Ridley*), 1 ♀; Sumatra. *Exp.* 40–46 millim.

3090. Perigeodes rectivitta.

Orthosia rectivitta, Moore, P. Z. S. 1881, p. 353; Hmpsn. Moths Ind. ii. p. 469.

Head and tegulæ rufous; palpi blackish at sides; frons with black bars at middle and above; tegulæ with black annuli and blackish tips; thorax fuscous brown with a few pale scales, the prothoracic crest tipped with ochreous; tarsi fuscous ringed with

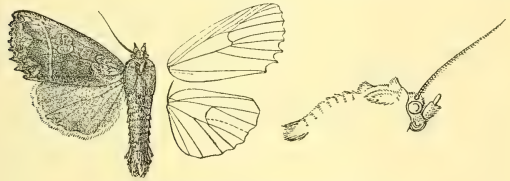


Fig. 48.—*Perigeodes rectivitta*, ♂. ½.

white; abdomen fuscous brown, the anal tuft and ventral surface rufous. Fore wing rufous largely irrorated and suffused with fuscous, the costal and terminal areas slightly redder; subbasal line faint, double, waved, from costa to submedian fold; antemedial line indistinct, double, filled in with ochreous, somewhat oblique and slightly waved, strongly excurved above inner margin; claviform represented by a patch of black scales; orbicular and reniform with faint ochreous annuli defined and their centres also defined by some black scales, the former elliptical; traces of a medial line oblique from costa to lower angle of cell; postmedial line double filled in with ochreous and with white points beyond it on the veins, somewhat oblique and very slightly incurved; postmedial area fuscous brown except towards costa; subterminal line defined by diffused ochreous on outer side, angled outwards at veins 7, 6, 4, 3, 2, and incurved at discal fold; a terminal series of black points; cilia intersected with rufous and with fine pale line at base. Hind wing fuscous brown; cilia pale rufous; the underside whitish thickly irrorated with brown, a slight whitish discoidal lunule defined by blackish at sides and curved dark postmedial line.

Hab. Sikhim, 1 ♀ type; Assam, Jaintia Hills, 1 ♂. *Exp.* 48 millim.

Genus **PERIGEA**.

	Type.
Perigea, Guen. Noct. i. p. 225 (1852)	*spicea*.
Condica, Wlk. ix. 239 (1856)	*cupentia*.
Prospalta, Wlk. xiii. 1114 (1857)	*leucospila*.
Bagada, Wlk. xv. 1753 (1858)	*spicea*.
Gaphara, Wlk. Trans. Ent. Soc. (3) i. p. 96 (1862)	*tetera*.
Myrtale, Druce, Biol. Centr.-Am., Het. i. p. 443 (1891)	*imitata*.

Proboscis fully developed; palpi upturned, the 2nd joint typically reaching about to vertex of head and smoothly scaled, the 3rd typically rather long; frons smooth; eyes large, round; antennæ of male typically minutely ciliated; thorax smoothly clothed with scales, the prothorax with spreading crest, the metathorax with slight crest; tibiæ moderately fringed with hair; abdomen with slight dorsal crests on basal segments. Fore wing with the apex rectangular, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male minutely serrate and fasciculate.

A. Hind wing white with fine terminal brown line ..... *leucoptya*.
B. Hind wing of male mostly suffused with brown, of female wholly suffused.
  a. Fore wing with slight yellow marks on subterminal line at discal and submedian folds ..... *apameoides*.
  b. Fore wing with prominent yellow patches on subterminal line at discal and submedian folds ..... *subaurea*.

*3091. **Perigea leucoptya**. (Plate CXV. fig. 15.)

Perigea leucoptya, Dogn. Ann. Soc. Ent. Belg. li. p. 235 (1907).

♂. Head and thorax bright rufous mixed with some yellowish white; tarsi slightly ringed with white; abdomen white slightly tinged with rufous, the dorsal crests mixed with brown. Fore wing bright rufous slightly suffused and irrorated with brown, the veins streaked with brown; a short white streak below base of cell with two small obliquely placed white spots above its extremity; subbasal line represented by a faint pale striga from costa; antemedial line indistinct, waved, nearly erect; orbicular and reniform white defined by brown and with some rufous in centres, the former somewhat triangular, the latter with four white points above, expanding and trilobate below; postmedial line indistinct, dark, with whitish point at costa, bent outwards below costa, then dentate, incurved below vein 3, some whitish points beyond it on costa; subterminal line whitish slightly defined by brown on inner side, very slightly angled outwards at vein 7 and excurved at middle; a terminal series of blackish points with slight whitish marks before them; cilia brown with fine pale line at base. Hind wing pure white with fine brown terminal line from apex to vein 2; the underside with the costal area irrorated with brown, a terminal series of black points from apex to vein 2.

Hab. Colombia, Minca; Peru, Trujillo, type † ♂ in Coll Dognin. *Exp.* 30 millim.

3092. Perigea apameoides.

Perigea apameoides, Guen. Noct. i p. 229 (1852).
Celæna plagiata, Wlk. x. 268 (1856).
Perigea mobilis, Wlk. x. 277 (1856).
Celæna inclinata, Wlk. xi. 732 (1857).
Perigea subaurata, Wlk. xxxii. 681 (1865).
Perigea icole, Grote, Proc. Bost. Soc. N. H. xviii. p. 414 (1875); Smith, Cat. Noct. N. Am. p. 152.
Perigea subaurea, Druce, Biol. Centr.-Am., Het. i. p. 277, nec Guen.

Head and thorax yellow mixed with rufous and a few fuscous scales; palpi with the 2nd joint blackish at sides; tegulæ with slight dark medial line; tarsi black ringed with yellow; abdomen pale yellow mixed with red-brown, the dorsal crests darker. Fore wing golden yellow suffused with rufous and dark brown, the inner

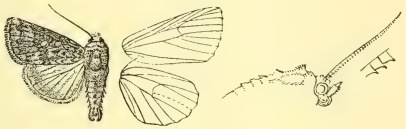


Fig. 49.—*Perigea apameoides*, ♂. ½.

area less suffused, the veins streaked with brown; blackish points at base of costa and cell; subbasal line indistinct, double, filled in with yellow, waved, from costa to submedian fold; antemedial line double, red-brown, filled in with yellow, waved, angled inwards to white points on the veins; claviform a minute red-brown mark; orbicular and reniform with yellow annuli defined by brown, the former rounded, the latter constricted at middle and with white spot in lower part; a rather diffused minutely waved brown medial line; postmedial line brown with yellow spot at costa, bent outwards below costa, then very minutely waved, incurved below vein 4 to lower edge of reniform, a series of black and white points beyond it on the veins and some yellow points on costa; subterminal line defined by dark brown on inner side, angled outwards at veins 7, 6, 4, 3, and incurved at discal and submedian folds; a terminal series of minute black lunules with yellowish lunules on their inner edges. Hind wing yellowish white, the veins and terminal area suffused with brown; a slight dark terminal line; cilia white with a slight brown line through them towards apex; the underside yellowish, the costal area tinged with red, a slight dark discoidal lunule, and postmedial points on the veins towards costa.

Ab. 1. *mobilis*. Fore wing with the white spot on reniform obsolescent.

Ab. 2. *icole*. Fore wing more uniform red with very little yellow except filling in the lines, the white spot on reniform present or absent.

Hab. U.S.A., Florida, 3 ♂ type *icole*; Mexico, Jalapa (*Trujillo*), 3 ♂, 2 ♀, Coatepec (*Brook*), 1 ♂, Teapa (*H. H. Smith*), 1 ♂; Honduras (*Dyson*), 1 ♀ type *subaurata*, Belize (*Blancaneaux*), 1 ♀; Guatemala (*Rodriguez*, *Sadler*), 1 ♂, 2 ♀; Panama, Chiriqui (*Champion*, *Ribbé*), 2 ♂, 5 ♀, Godman-Salvin Coll.; Bermuda, 'Challenger' Coll., 3 ♀; Bahamas (*Neville Chamberlain*), 1 ♂, 1 ♀; Jamaica (*Bowrey*, *Kaye*), 1 ♂, 2 ♀, Gordontown (*Kaye*), 1 ♀, Cinchona (*Fawcett*), 1 ♀, Moneague (*Walsingham*), 1 ♂, 1 ♀; Cuba, Santiago (*Schaus*), 2 ♂, 2 ♀, Matanzas (*Schaus*), 2 ♂; Haiti (*Tweedie*), 2 ♂, 2 ♀, types *mobilis* and *inclinata*; St. Vincent (*H. H. Smith*), 1 ♀; Grenada (*H. H. Smith*), 3 ♀; Trinidad (*Carraciola*), 1 ♂, 1 ♀; Venezuela, 1 ♂; Brazil, Espiritu Santo, 1 ♂, São Paulo (*D. Jones*), 2 ♀; Peru, 1 ♂; Paraguay, Sapucay (*Foster*), 2 ♂, 2 ♀; Argentina, Tucuman, 1 ♀, Goya (*Perrins*), 1 ♀. *Exp.* 26–36 millim. Type † *plagiata* in Mus. Oxon.

3093. **Perigea subaurea.** (Plate CXV. fig. 16.)

Perigea subaurea, Guen. Noct. i. p. 227 (1852).

♀. Head and thorax red-brown mixed with yellow; palpi dark at sides; frons with lateral black bars; tegulæ with dark medial line; tarsi blackish ringed with ochreous; abdomen ochreous dorsally suffused with dark brown, ventrally irrorated with dark brown, the anal tuft rufous, a sublateral series of small blackish spots. Fore wing golden yellow suffused with red-brown, the inner area less suffused; a black basal point; traces of a double subbasal line from costa to submedian fold where there is a slight yellowish mark beyond it with a dark point on it; antemedial line indistinctly double, waved; orbicular with faint yellowish annulus, round; reniform with traces of yellowish annulus partly defined by blackish and with white spot in lower part; postmedial line indistinctly double filled in with yellowish, bent outwards below costa, then minutely dentate and produced to dark streaks on the veins with white points on them, incurved below vein 4, some slight yellowish points beyond it on costa; subterminal line indistinct, dark, with diffused yellow lunules beyond it from below costa to vein 4 and above tornus, angled outwards at veins 7, 6 and excurved at middle; a terminal series of slight black lunules with yellow spots on their inner side; cilia dark brown mixed with yellow and with yellow spots at base. Hind wing uniform dark reddish brown, the cilia yellowish white; the underside yellowish white, the costal and terminal areas irrorated with brown, a dark discoidal point, postmedial series of points on the veins from costa to vein 2, diffused subterminal band, and terminal series of small black lunules.

Hab. Brazil, Rio Janeiro (*Wilson*), 2 ♀. *Exp.* 42 millim.

Sect. II. Antennæ of male with very long bristles and cilia with slight tufts of scales at the joints.

3094. Perigea semiumbrosa.

Hadena semiumbrosa, Saalm. Lep. Madag. p. 317, f. 230 (1891).

♂. Head and thorax reddish brown mixed with grey and some black; tegulæ with ill-defined black lines at middle and near tips; tarsi banded with black; abdomen dorsally fuscous, ventrally ochreous suffused with red-brown. Fore wing greyish ochreous irrorated with deep purple-red and dark brown, the basal half suffused with brown leaving the inner area before the antemedial line mostly ochreous; subbasal line double filled in with ochreous, waved, from costa to submedian fold, with some purple-red on its outer edge; antemedial line double, waved, oblique, angled outwards above inner margin; claviform indistinct, defined by purple-red; orbicular with ochreous centre and whitish annulus defined by black at sides, rather quadrate; reniform with ochreous centre and undefined whitish annulus, constricted at middle and extending to well below cell; an indistinct medial line oblique

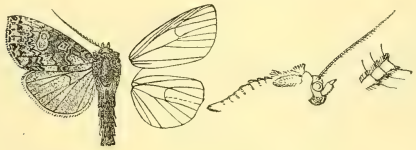


Fig. 50.—*Perigea semiumbrosa*, ♂. ½.

from costa to median nervure, then waved; postmedial line indistinctly double, strongly bent outwards below costa, then oblique, dentate and produced to black and white points on the veins, some minute dark streaks beyond it on costa; subterminal line very indistinct, whitish defined on inner side by small dentate blackish marks below veins 7, 6, 4, 3, 2 and with black marks beyond it at apex and middle, minutely waved and incurved at discal and submedian folds; a terminal series of slight black lunules; cilia greyish mixed with red-brown. Hind wing fuscous brown, the basal inner area pale with an ochreous tinge; cilia ochreous; the underside ochreous white, the costal and terminal areas suffused with red-brown and irrorated with fuscous, a black discoidal spot, diffused sinuous postmedial line, and terminal series of slight lunules.

Hab. Madagascar, Betsileo (*Cowan*), 1 ♂. *Exp.* 36 millim.

Sect. III. Antennæ of male ciliated.

A. (*Myrtale*). Palpi of male with the basal joint long and fringed with hair above, the 2nd joint very long with large tufts of hair at extremity on inner and outer sides and on 3rd joint, a tuft of hair from below base of palpi; antennæ with the basal joint dilated and with tuft of hair behind, the shaft distorted just before middle; fore legs with tufts of hair on inner side at extremity of tibiæ and tarsal joints; abdomen with lateral tufts of red hair from base and large fan-shaped crest at base; hind wing with fringe of long hair and scales on inner margin.

3095. Perigea imitata.

Myrtale imitata, Druce, Biol. Centr.-Am., Het. i. p. 443, pl. 36. ff. 6, 7 (1891).

♂. Head and tegulæ ochreous white, the latter suffused with rufous except at base; palpi suffused with rufous; frons with lateral black bars; antennæ tinged with rufous; thorax white tinged with grey, some dark brown in prothoracic crest; pectus and legs ochreous mixed with brown, the tarsi black ringed with white; abdomen whitish suffused with brown, the lateral tufts blood-red, sublateral series of small blackish spots except towards base. Fore wing grey-white, the costal area rufous irrorated with black to below cell and to middle of wing with oblique outer edge,

Fig. 51.—*Perigea imitata*, ♂. ½.

the postmedial area rufous to submedian fold, an apical rufous spot, and the terminal area suffused with rufous between veins 4 and 1; subbasal line black, indistinct, double, waved, from costa to submedian fold; antemedial line very indistinctly double, angled outwards below costa, then inwardly oblique and minutely waved, almost obsolete on inner area, with black point on its outer edge at vein 1 and diffused black streak before it below cell; claviform a rather diffused black mark extending obliquely to origin of vein 2 at its extremity; orbicular and reniform grey-white slightly and irregularly defined by brown, the former irrorated with grey, rounded, the latter with its centre slightly defined by grey, somewhat angled inwards on median nervure; faint traces of a somewhat waved medial line, oblique from costa to vein 2; postmedial line double, filled in with white at costa, then very indistinct, strongly bent outwards below costa, then produced to a double series of black points on the veins with whitish points

between them, some white points beyond it on costa; subterminal line very indistinct, greyish faintly defined by brown on each side, minutely waved, on the rufous apical spot represented by two slight blackish streaks on the veins with white points on each side of the one below costa, almost obsolete on the grey-white patch which extends to vein 4; a terminal series of small black lunules with whitish lunules before them on rufous area: cilia white with blackish line through them and mixed with blackish at tips. Hind wing whitish suffused with fuscous brown except basal and inner areas, the inner area tinged with ochreous and the fringe with rufous; the termen whitish with obscure series of subterminal brown lunules; the extremity of veins reddish; a terminal series of slight blackish lunules; cilia white; the underside white, the costal area irrorated with rufous, a faint discoidal spot and postmedial line from costa to vein 5, a diffused fuscous subterminal band and terminal series of small blackish lunules from costa to vein 2.

♀. Fore wing rather more suffused with brown and the markings more distinct; hind wing suffused with fuscous except basal area.

Hab. Panama, Chiriqui; Venezuela, Aroa, 1 ♂; Brazil, Espiritu Santo, 1 ♀, Rio Janeiro. *Exp.* 42 millim.

B. Palpi of male with the basal joint normal, the 2nd joint shorter than in section A and fringed in front with rather downturned hair, with tufts of long hair at extremity and on 3rd joint on inner side only, a tuft of hair from below base of palpi; antennæ with the basal joint dilated and tufted with hair behind, the shaft distorted just before middle; fore tibiæ and tarsi normal; abdomen with lateral tufts of reddish hair from base and large fan-shaped dorsal crest at base; hind wing with fringe of long hair and scales on inner margin.

3096. **Perigea mimica**, n. sp.

♂. Head ochreous mixed with rufous and dark brown; tegulæ ochreous and rufous at base, dark brown at tips and with brown medial line; thorax white slightly tinged with grey; pectus ochreous; legs irrorated with brown, the tarsi black ringed with

Fig. 52.—*Perigea mimica*, ♂. ½.

white; abdomen ochreous white with diffused fuscous dorsal bands, the lateral and anal tufts tinged with rufous, sublateral series of small fuscous spots except towards base. Fore wing white faintly tinged with grey, the costal half red-brown suffused with fuscous to

submedian fold, the orbicular and reniform, a patch on medial area below cell and a patch on terminal area from costa to vein 4 white, the last with bidentate apical brown spot on it; subbasal line indistinct, double, black, waved, from costa to submedian fold, with a short diffused blackish streak beyond its lower extremity and a blackish spot below it above inner margin; antemedial line indistinct, interrupted, double, minutely waved, oblique; claviform a black patch, large; orbicular and reniform white incompletely defined by black, the former irregularly rounded, the latter twice constricted and with small blackish spot on lower inner side of centre; an indistinct waved medial line; postmedial line indistinct, double, filled in with white at costa, strongly bent outwards below costa, then dentate and produced to black and pale points on the veins, rather oblique below vein 4, some white points beyond it on costa; subterminal line represented by a white point below costa on the brown apical spot and slight whitish marks on the brown area below middle; a terminal series of small black lunules with white lunules before them on the brown area; cilia white with small black spots at tips on apical half, chequered white and fuscous at the brown area, wholly white towards tornus. Hind wing with the basal and inner areas yellowish white, the terminal half fuscous narrowing to tornus; a terminal series of small blackish lunules from apex to submedian fold, defined by whitish lunules on inner side except towards apex; cilia white; the underside white, the costal area irrorated with brown, a slight discoidal spot and traces of a postmedial line from costa to vein 5, a diffused brown band, terminal from apex to vein 5, then subterminal and obsolescent to vein 1.

♀. Hind wing wholly suffused with fuscous.

Hab. Trinidad (*Kaye*), 1 ♀; Venezuela, Aroa, 3 ♂ type; Br. Guiana, Bartica (*Kaye*), 1 ♀; Paraguay, Sapucay (*Foster*), 2 ♀. *Exp.* 42 millim.

C. Palpi of male with the basal joint normal, the 2nd about as long as in section B, and with tufts of long hair at extremity and on 3rd joint on inner side only, no tuft of hair from below base of palpi; antennæ and fore legs normal; abdomen without lateral tufts of hair and with very large fan-shaped basal crest; hind wing with the inner area clothed with rough hair but without fringes of hair and scales.

3097. **Perigea simulatrix**, n. sp.

♀. Head and tegulæ ochreous white mixed with rufous; frons with lateral black bars; tegulæ with brown medial line; thorax white tinged with grey; pectus and legs whitish mixed with rufous, the tarsi black ringed with white; abdomen dorsally grey-white suffused with reddish brown, ventrally yellowish white, sublateral series of small black spots except towards base. Fore wing grey-white, the basal area to antemedial line and submedian fold dark red-brown, the medial costal area red-brown; the postmedial area to submedian fold and a patch on terminal area between

vein 4 and submedian fold red-brown, leaving a large grey patch on apical half of termen with bar-shaped apical brown spot on it; subbasal line double filled in with grey, curved, from costa to submedian fold, with a small blackish spot below it above inner margin; antemedial line indistinctly double, interrupted, almost obsolete on inner area, somewhat oblique and angled inwards on vein 1; claviform a diffused black spot; orbicular and reniform

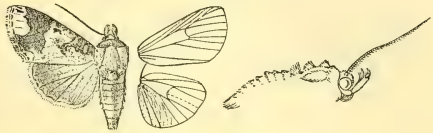


Fig. 53.—*Perigea simulatrix*, ♂. ½.

grey-white incompletely defined by blackish, the former rounded, the latter constricted and irregular above, rounded below and extending to well beyond cell, with small dark spot on lower inner side of centre; postmedial line indistinct, double, filled in with some grey, strongly bent outwards below costa, then dentate and produced to blackish and grey points on the veins, somewhat oblique below vein 4, with some white points beyond it on costa; subterminal line represented by a whitish point below costa on the apical spot and slight whitish marks on the brown area; a terminal series of slight blackish lunules with whitish lunules before them on the brown area; cilia whitish with small black spots at tips on apical half, mixed with brown at the brown area. Hind wing grey suffused with fuscous, the inner area whitish suffused with pale brown; a terminal series of small dark lunules with whitish lunules before them; cilia white; the underside white, the costal area suffused with fuscous, a diffused fuscous subterminal band to vein 2.

♀. Fore wing with diffused dentate dark subterminal marks on the greyish apical patch; hind wing wholly suffused with fuscous.

Hab. Venezuela, Aroa, 1 ♂, 2 ♀, type. *Exp.* 38 millim.

D. Fore wing of male with slight fovea in extremity of cell.

3098. Perigea eriopoda.

Hadena eriopoda, Herr.-Schäff. Eur. Schmett. ii. p. 413 (1851) & Noct. f. 596; Staud. Cat. Lep. pal. p. 199.
Perigea sareptæ, Guen. Noct. i. p. 230 (1852).

Head and thorax dark brown mixed with grey; palpi brown, greyish in front; tarsi black ringed with white; abdomen grey-brown, the crests blackish at tips. Fore wing grey tinged with rufous and almost entirely irrorated and suffused with fuscous brown; subbasal line blackish defined by grey on outer side, waved,

from costa to submedian fold; antemedial line blackish, double, filled in with grey at costa, then oblique, waved; claviform and orbicular absent; reniform represented by two white points at its upper extremity; a slight medial dark striga from costa; post-medial line double, blackish filled in with grey, slightly bent outwards below costa, incurved below vein 5, then erect to inner

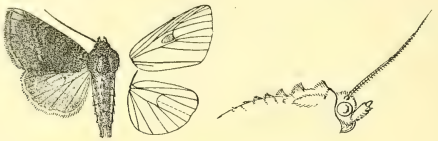


Fig. 54.—*Perigea eriopoda*, ♂. ½.

margin and with white points beyond it on the veins and some white points on costa; subterminal line indistinct, pale, defined on inner side by dark suffusion towards costa, slightly angled outwards at vein 7 and excurved at middle; a waved black terminal line with white points at the veins; cilia brown with yellowish-white line at base. Hind wing grey suffused with brown, the basal and inner areas rather paler; a waved dark terminal line with white points at the veins; cilia brown with a yellowish-white line at base; the underside white irrorated with fuscous, a slight discoidal spot and dark postmedial line bent inwards to costa and oblique below vein 5.

Ab. 1. Fore wing with grey suffusion tinged with flesh-colour beyond end of cell and beyond the postmedial line from vein 3 to inner margin.

Hab. Bulgaria; Cyprus (*Miss Bate*), 1 ♂, 3 ♀; Asia Minor, Bithynia, Taurus, Diarbakir, 1 ♂, 1 ♀; Syria, Leech Coll., 1 ♂, 4 ♀. *Exp.* 34–42 millim.

E. (*Perigea*). Male without secondary sexual characters.
  a. Fore wing with a large part of wing occupied by grey or white patches.
    a^1. Fore wing with large elliptical whitish patch on termen below apex ..... *cupentia.*
    b^1. Fore wing without large elliptical whitish patch on termen below apex.
      a^2. Fore wing with blue-grey or whitish spot on subterminal line at discal fold.
        a^3. Fore wing with the orbicular minute, with grey annulus ..... *griseirena.*
        b^3. Fore wing with the orbicular large and filled in with white ..... *leprosa.*
      b^2. Fore wing without blue-grey or whitish spot on subterminal line at discal fold.
        a^3. Fore wing with the postmedial line bent outwards below costa.
          a^4. Fore wing with the postmedial line strongly excurved from below costa to inner margin ..... *poliopasta.*

b^4. Fore wing with the postmedial line excurved at middle ..... *quadrimacula.*
c^4. Fore wing with the postmedial line nearly straight from below costa to inner margin.
a^5. Fore wing with the inner half of medial area whitish.
a^6. Fore wing with the whole terminal area suffused with white ..... *glaucoptera.*
b^6. Fore wing with the whole terminal area suffused with white except an oblique fascia below apex.
a^7. Fore wing with the postmedial area whitish except at discal and submedian folds ..... *leucostrota.*
b^7. Fore wing with the postmedial area brown except towards costa ..... *grandirena.*
c^6. Fore wing with the terminal area suffused with white at apex only ..... *hippia.*
b^5. Fore wing with the inner half of medial area brown ..... *calma.*
b^3. Fore wing with the postmedial line straight from costa to inner margin ..... *discincta.*
b. Fore wing with a large part of wing not occupied by grey or white patches.
a^1. Fore wing cupreous black-brown.
a^2. Fore wing with subterminal and terminal series of small white spots.
a^3. Fore wing with the orbicular with white centre defined by white points.
a^4. Fore wing with the claviform a small white spot..... *siderea.*
b^4. Fore wing with the claviform represented by a slight dark streak..... *stellata.*
b^3. Fore wing with the orbicular not defined by white points.
c^4. Fore wing with the centre of the reniform broken up into white points.
a^5. Fore wing with the orbicular a round white spot..... *contigua.*
b^5. Fore wing with the orbicular a white annulus..... *cyclica.*
b^4. Fore wing with round white spot in centre of reniform with small brown lunule on it ..... *leucospila.*
b^2. Fore wing without terminal series of small white spots.
a^3. Fore wing with the reniform broken up into white points ..... *albomaculata.*
b^3. Fore wing with the reniform with slight white lunule on its inner edge..... *atricuprea.*
b^1. Fore wing not cupreous black-brown.
a^2. Fore wing with subterminal and terminal series of small white spots.
a^3. Fore wing with the orbicular with white centre defined by white points.
a^4. Fore wing fuscous black, the orbicular and reniform confluent on median nervure. *confluens.*
b^4. Fore wing red-brown, the orbicular and reniform not confluent on median nervure.
a^5. Hind wing of male white, the terminal area suffused with brown, of female wholly suffused with brown ..... *subornata.*

b^5. Hind wing wholly tinged with brown in both sexes.
a^6. Fore wing without white apical patch . *stelligera.*
b^6. Fore wing with white apical patch ..... *africana.*
c^5. Hind wing with the termen purplish red . *purpurea.*
b^3. Fore wing with the orbicular defined by white points, but without white centre..... *parva.*
c^3. Fore wing with the orbicular with white annulus ..... *abida.*
d^3. Fore wing with the orbicular with slight yellowish annulus.
a^4. Fore wing with two small white spots on subterminal line between veins 6 and 4.
a^5. Hind wing wholly suffused with brown... *albolabes.*
b^5. Hind wing with the basal half yellowish white in male .... *albigeroides.*
b^4. Fore wing with white lunule on subterminal line between veins 6 and 4 ..... *roxana.*
b^2. Fore wing without well-defined white spots on subterminal line.
a^3. Fore wing without fiery-red, crimson, or pink markings.
a^4. Fore wing not yellowish with patches of rufous and brown suffusion in parts.
a^5. Fore wing without black streak below base of cell.
a^6. Fore wing without black fascia in discal fold beyond the reniform.
a^7. Fore wing with the reniform defined on all sides by white points.
a^8. Hind wing white, the terminal area with dark suffusion, in female more suffused ..... *dolerosa.*
b^8. Hind wing entirely suffused with brown in both sexes ..... *galaxia.*
c^8. Hind wing pale purplish red..... *dinava.*
b^7. Fore wing with the reniform not defined on all sides by white points.
a^8. Hind wing white, the terminal area with dark suffusion, in female more suffused.
a^9. Fore wing without series of white points on the veins beyond postmedial line ..... *punctirena.*
b^9. Fore wing with series of white points on the veins beyond postmedial line.
a^{10}. Fore wing with large white patch on lower part of reniform, sometimes broken up into dentate marks ..... *dentistrigata.*
b^{10}. Fore wing with small white spot in lower part of reniform with yellowish lunule below it ..... *circuita.*
c^{10}. Fore wing with oblique white striga in lower part of reniform with two white points beyond it ..... *albigera.*
d^{10}. Fore wing with the reniform with pale or whitish centre and pale annulus with two white points at lower extremity.
a^{11}. Fore wing with the scaling glossy. *carcoma.*

b^{11}. Fore wing with the scaling not glossy.
a^{12}. Fore wing grey and fuscous without any red-brown tinge.
a^{13}. Fore wing with prominent black spot at extremity of claviform. *sufficiens.*
b^{13}. Fore wing with the claviform slightly defined by black.
a^{14}. Fore wing with the antemedial line oblique, strongly excurved above inner margin. *concisa.*
b^{14}. Fore wing with the antemedial line less oblique and slightly excurved above inner margin ..... *confundens.*
b^{12}. Fore wing tinged with red-brown.
a^{13}. Fore wing suffused with pale red-brown ..... *sutor.*
b^{13}. Fore wing suffused with deeper purple-brown ..... *capensis.*
c^{10}. Fore wing with the reniform with brown centre and entire pale annulus not broken up into points at lower extremity ..... *lineata.*
f^{10}. Fore wing with the reniform with brown centre faintly defined by black and without pale annulus.
a^{11}. Fore wing red-brown ..... *cenola.*
b^{11}. Fore wing grey-brown ..... *tetera.*
b^{8}. Hind wing wholly suffused with brown.
a^{9}. Fore wing fuscous brown strongly irrorated with grey-white and without any red-brown tinge.
a^{10}. Fore wing with the postmedial line defined by white on outer side, the subterminal line diffused white..... *griseata.*
b^{10}. Fore wing with the postmedial line faintly defined by grey on outer side, the subterminal line represented by slight grey streaks on the veins ..... *fuliginosa.*
b^{9}. Fore wing with more or less prominent red-brown tinge.
a^{10}. Fore wing with the postmedial area concolorous.
a^{11}. Fore wing red-brown nearly uniformly suffused with black and without greyish patches.
a^{12}. Hind wing nearly uniform black-brown; size small ..... *vacillans.*
b^{12}. Hind wing paler at base; size large ..... *selenosa.*
b^{11}. Fore wing with patches of greyish and black suffusion ..... *berinda.*
b^{10}. Fore wing with the postmedial area suffused with fuscous black. *mustia.*
b^{6}. Fore wing with black fascia in discal fold beyond the reniform..... *agalla.*

b^5. Fore wing with black streak below base of cell.
a^6. Fore wing with black and brown shades.
a^7. Fore wing with the orbicular narrow and elongate, the reniform with its inner edge strongly incurved ..... *bahamica.*
b^7. Fore wing with the orbicular rounded, the reniform with its inner edge nearly straight.
a^8. Fore wing with whitish points at lower extremity of reniform ..... *punctifera.*
b^8. Fore wing with the annulus of reniform entire, pale ..... *secorva.*
b^6. Fore wing with the ground-colour deep red ..... *rubrifusa.*
b^4. Fore wing with the ground-colour yellowish with patches of rufous and dark brown suffusion.
a^5. Fore wing with the veins of terminal area dark defined on each side by pale streaks.
a^6. Fore wing with the subterminal line present.
a^7. Fore wing with the slight streak below base of cell and the streaks in interspaces of terminal area blackish ..... *agnonia.*
b^7. Fore wing with the streak below base of cell and the streaks in interspaces of terminal area red ..... *parastichtoides.*
b^6. Fore wing with the subterminal line absent ..... *leucanioides.*
b^5. Fore wing without dark streaks on the veins of terminal area defined by pale streaks.
a^6. Fore wing without pale patch on apical part of costa defined below by an oblique dark streak from apex.
a^7. Fore wing with brown streak on inner margin ..... *xylophasioides.*
b^7. Fore wing without brown streak on inner margin.
a^8. Fore wing with the antemedial line single ..... *xanthioides.*
b^8. Fore wing with the antemedial line double.
a^9. Fore wing with the terminal area not suffused with dark brown ..... *abstemia.*
b^9. Fore wing with the terminal area suffused with dark brown ..... *perparvula.*
b^6. Fore wing with pale patch on apical part of costa defined below by an oblique dark streak from apex.
a^7. Hind wing not pinkish.
a^8. Fore wing with the base and inner area to beyond middle yellowish tinged with green ..... *ethiopica.*
b^8. Fore wing with the base and inner area to beyond middle not tinged with green ..... *spicca*
b^7. Hind wing pinkish ..... *metarhoda.*

b^3. Fore wing with more or less developed fiery-red, crimson or pink markings.
a^4. Fore wing not largely suffused with yellow and fiery-red, the centres of orbicular and reniform defined by deep crimson.
a^5. Fore wing without crimson on costa at base and beyond middle and on antemedial area below the cell ..... *pyrostigma.*
b^5. Fore wing with crimson on costa at base and beyond middle, and on antemedial area below the cell ..... *octophora.*
b^4. Fore wing largely suffused with yellow and fiery red.
a^5. Fore wing with the orbicular and reniform with yellow annuli.
a^6. Fore wing with white spot in lower part of reniform ..... *leucopis.*
b^6. Fore wing without white spot in lower part of reniform ..... *pyrosticta.*
b^5. Fore wing with the orbicular and reniform with silvery white annuli.
a^6. Fore wing without white spot at extremity of claviform ..... *naolina.*
b^6. Fore wing with white spot at extremity of claviform ..... *ignitincta.*
c^4. Fore wing with tessellated patches of pinkish white on costal area at base and apex, and on medial area in and below cell ..... *multipunctata.*

3099. Perigea cupentia.

Phalæna cupentia, Cram. Pap. Exot. iii. p. 103, pl. 252. f. E (1782), ♀; Druce, Biol. Centr.-Am., Het. i. p. 276.
Noctua epopea, Cram. Pap. Exot. iii. p. 144, pl. 272. ff. G, H (1782), ♂; Druce, Biol. Centr.-Am., Het. i. p. 277; Smith, Cat. Noct. N. Am. p. 152.
Perigea infelix, Guen. Noct. i. p. 229 (1852).
Condica palpalis, Wlk. ix. 240 (1856).
Hadena confederata, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 143 (1874).

♂. Head and tegulæ ochreous tinged with rufous and mixed with dark brown; thorax white tinged with ochreous or greyish and with dark streak on outer edge of patagia; tarsi blackish ringed with white; abdomen ochreous white dorsally suffused with fuscous. Fore wing white usually more or less tinged with rufous, rarely with grey; the basal area blackish to antemedial line and submedian fold, with sinuous lower edge and dark mark on base of inner margin, the postmedial area blackish from costa above reniform obliquely to submedian fold at postmedial line, extending to apex and middle of termen, leaving an elliptical whitish patch on termen from below apex to vein 4, narrowing to submedian fold where it terminates; subbasal line represented by a whitish mark from costa to just below cell; antemedial line double at costa, slightly retracted below costa, then oblique to vein 1 where it terminates; claviform absent; orbicular and reniform whitish with

slight white annuli, the former rather oblique elliptical, the latter constricted at middle; faint traces of a diffused medial line; post-medial line indistinct, double, with white spot at costa, strongly bent outwards below costa, then dentate and produced to black and hite points on the veins, somewhat outwardly oblique below ein 3, some whitish points beyond it on costa; subterminal line represented by faint diffused dark irroration on the whitish areas; a terminal series of small black lunules; cilia whitish with terminal series of black points. Hind wing whitish tinged with ochreous, the veins dark, the terminal half suffused with fuscous from costa to vein 2; cilia yellowish white tipped with fuscous at apex; the underside white, the costal area irrorated with fuscous and with fuscous apical patch, a slight waved postmedial line and diffused subterminal line from costa to vein 2.

♀. Thorax blue-grey; abdomen grey suffused with fuscous; fore wing with the white areas replaced by blue-grey and the blackish areas by red-brown; the grey areas irrorated with fuscous, some red-brown in cell between the stigmata and below cell; the stigmata blue-grey with their centres defined by brown, the orbicular small elliptical, the reniform figure-of-8 shaped, the claviform a dark patch; the lines more distinct. Hind wing uniformly suffused with fuscous.

Ab. 1. *confederata*, ♂. Fore wing with the claviform black, the antemedial line entire, angled inwards on vein 1, then excurved, orbicular and reniform defined by blackish, the dark mark representing the terminal line more distinct.

Ab. 2. *infelix*, ♂ ♀. Head and thorax red-brown mixed with some grey scales; fore wing red-brown irrorated with pale scales, the inner area slightly paler, the subapical patch distinctly paler, the markings indistinct.

Hab. U.S.A., E. States from Maine to Florida, 2 ♂, 1 ♀, type *confederata*, New York, 1 ♀, Florida (*Doubleday, Nicol*), 2 ♀ type *infelix*; Guatemala (*Rodriguez*), 1 ♂; Costa Rica, Sta. Clara Valley (*Zurcher*), 1 ♂, Candelaria Mts. (*Underwood*), 1 ♀; Panama, Chiriqui (*Champion, Ribbé*), 1 ♂, 4 ♀, Godman-Salvin Coll.; Jamaica (*Martin*), 1 ♀, Gordon Town (*Kaye*), 1 ♂, Cinchona (*Kaye*), 1 ♀, Moneague (*Walsingham*), 1 ♂, 1 ♀; Cuba, Baracoa (*Schaus*), 3 ♂, 2 ♀, Alcadro (*Schaus*), 1 ♂; Haiti (*Tweedie*), 1 ♀; Dominica (*Elliott*), 1 ♂, 2 ♀; Sta. Lucia, 3 ♂; St. Vincent (*H. H. Smith*), 2 ♂; Trinidad, Cuparo (*Kaye*), 1 ♀; Br. Guiana, Bartica (*Kaye*), 1 ♂; Brazil, Amazons, Paraña de Buyassu (*Austen*), 1 ♂, 1 ♀, Organ Mts., Tijuca (*Wagner*), 1 ♀; Peru, Callão (*J. J. Walker*), 1 ♂; Paraguay, Sapucay (*Foster*), 1 ♂, 2 ♀; hab. ign. 1 ♂ type *palpalis*. *Exp.* 36–46 millim.

3100. Perigea griseirena, n. sp. (Plate CXV. fig. 17.)

♂. Head and thorax bright red-brown; frons and a bar on vertex of head whitish, the former with lateral black bars; palpi with the tips of 2nd and 3rd joints whitish; vertex of thorax with fascia of white and fuscous scales; pectus yellow at sides; legs

yellow and rufous, the spurs and tarsi blackish ringed with white; abdomen greyish mixed with fuscous, the anal tuft and ventral surface yellowish white. Fore wing bright red-brown slightly irrorated with blue-grey; subbasal line represented by a white striga from costa and blue-grey spot below cell; antemedial line with white striga from costa, then blue-grey, waved, angled inwards on vein 1; claviform absent; orbicular a small blue-grey spot; reniform blue-grey slightly defined by brown, amphora-shaped, constricted at middle, rounded below and extending to well below cell; postmedial line with white striga from costa, then blue-grey, interrupted, strongly bent outwards below costa, then dentate and produced to grey points on the veins, slightly incurved at discal fold and incurved below vein 4, some white points beyond it on costa; subterminal line formed by slight blue-grey lunules with small dark spots on their inner sides, angled outwards at veins 7, 6, 4, 3, incurved and with blue-grey patch beyond it between veins 6 and 4; a terminal series of small black lunules with blue-grey lunules on their inner side; cilia white with brown line through them and brown tips. Hind wing fuscous brown, the inner and basal areas brownish white; a fine waved black terminal line; cilia white; the underside whitish, the costal area and subterminal area to vein 2 thickly irrorated with red, a small black discoidal spot, crenulate postmedial line and faint irregular subterminal line from costa to vein 2, a terminal series of small black lunules.

Hab. S.E. Peru, S. Domingo, 1 ♂ type. *Exp.* 36 millim.

3101. Perigea leprosa. (Plate CXV. fig. 18.)

Polydesma leprosa, Hmpsn. J. Bomb. Soc. xi. p. 455 (1897).

♂. Head ochreous mixed with rufous; palpi blackish at sides; frons with black lateral bars; tegulæ rufous with white medial patches; thorax pure white; pectus and legs ochreous and brown, the tarsi black with pale rings; abdomen ochreous suffused with fuscous, the dorsal crests black. Fore wing rufous suffused with black, especially on basal half; a large white patch on basal area from below costa to inner margin; subbasal line represented by a slight black striga from costa; antemedial line indistinct, minutely waved, with small whitish spot beyond it below costa; orbicular white with faint ochreous centre, large, round, a small round white spot beyond it before the reniform which is white with its centre very slightly defined by ochreous, very large and confluent above with a large white patch just below costa confluent with an apical white spot; postmedial line almost obsolete towards costa, strongly bent outwards below costa, then oblique, somewhat dentate and produced to whitish points on the veins, some brown striæ beyond it on costa; subterminal line dark, rather diffused, excurved below vein 7 and at middle, incurved at discal and submedian folds, where there are ochreous white patches beyond it; a terminal series of slight black striæ; cilia chequered ochreous and black. Hind wing ochreous tinged with brown, the terminal area suffused with fuscous

brown except towards tornus ; cilia ochreous ; the underside whitish, the costal area tinged with reddish and irrorated with brown, a faint discoidal lunule filled in with whitish, a diffused dark postmedial shade from costa to vein 2, and diffused subterminal band.

Hab. Assam, Khásis, 2 ♂ type. *Exp.* 32 millim.

3102. **Perigea poliopasta**, n. sp. (Plate CXV. fig. 19.)

♀. Head and tegulæ ochreous mixed with red-brown; thorax white with brown streak on outer edge of patagia; fore and mid legs irrorated with red-brown, the tarsi blackish ringed with pale rufous ; abdomen white tinged with red-brown. Fore wing greyish white pencilled with brown scales, the costal half suffused with red-brown to middle, extending before antemedial line to submedian fold in which there is a sinuous black streak, a red-brown patch from termen below apex to postmedial line, a series of small red-brown spots on costa ; subbasal line represented by double red-brown striæ from costa ; antemedial line double, minutely waved, from costa to submedian fold; claviform red-brown defined by a few black scales; orbicular grey-white with slight white annulus, elliptical, with grey patch above it from costa including a small brown spot on costa ; reniform defined by white bars at sides and with white spot on its outer edge ; postmedial line blackish, interrupted, strongly bent outwards below costa, then excurved and very slightly waved ; a faint minutely dentate subterminal line between veins 7 and 2 slightly defined by brown on inner side ; a terminal series of small black lunules with white points on their inner side ; cilia pale rufous. Hind wing whitish tinged with reddish brown, the terminal half suffused with fuscous brown ; a blackish terminal line ; cilia white tinged with rufous ; the underside white, the costal area suffused with rufous, the terminal area with brown from apex to vein 3, traces of a curved postmedial line from costa to vein 3.

Hab. Trinidad, Cuparo (*Kaye*), 1 ♀ ; Br. Guiana, Rockstone (*Kaye*), 1 ♀ type ; Bolivia, Yungaz la Paz. *Exp.* 32 millim.

3103. **Perigea quadrimacula**. (Plate CXV. fig. 20.)

Erastria quadrimacula, Mab. Ann. Soc. Ent. Fr. 1899, p. 729.

♂. Head and thorax grey tinged with brown and mixed with black ; palpi at sides and frons mostly black ; tegulæ largely mixed with black and with black line near tips ; tibiæ and tarsi black, the latter ringed wih grey ; abdomen brownish grey irrorated with fuscous and suffused with fuscous towards extremity. Fore wing grey thickly irrorated with fuscous brown ; a very oblique waved subbasal line from costa to submedian fold, where there is a short black streak beyond it, the area beyond it from costa to median nervure black-brown to the antemedial line which is double, indistinct, oblique, waved ; claviform extremely large, defined by black, circular and extending from cell to vein 1 ; orbicular defined by black and with brown centre, round ; reniform black-brown

defined by black except above, with oblique black band from costa to its upper edge and black streak from its outer edge to postmedial line which is bent outwards below costa, incurved at discal fold, excurved to vein 3, then incurved, a quadrate black patch beyond it from costa to vein 7 and a small mark in submedian interspace; subterminal line pale, waved, defined by fuscous on inner side and angled outwards to termen at submedian fold; a terminal series of small black lunules. Hind wing greyish suffused with fuscous brown, the terminal area suffused with black from below costa narrowing to tornus; a terminal series of black striæ. Underside brownish white irrorated with brown; both wings with black discoidal spot and diffused black subterminal band.

Hab. E. Africa, 1 ♂; Natal, Coast belt (*Barker*). *Exp.* 34 millim. Type † in Coll. Mabille.

3104. Perigea glaucoptera. (Plate CXV. fig. 21.)

Agrotis glaucoptera, Guen. Noct. i. p. 297, pl. 5. f. 6 (1852).

♂. Head yellow mixed with some rufous; palpi with black marks at extremity of 2nd joint and on outer side of 3rd joint; frons with black bar; tegulæ white at base with black semicircular line and rufous tips with some black behind them; thorax grey-white; pectus and legs reddish yellow, the tibiæ white at base, the fore and mid tibiæ with black marks at tips; abdomen white tinged with fuscous except at base, the dorsal crests with a few black scales. Fore wing grey-white; subbasal line represented by a very oblique black striga with a black point before it and oblique brown bar beyond it on inner side of the indistinct, double waved, oblique, antemedial line which is angled inwards on vein 1; claviform represented by a short black streak with a brown shade above it before and between the orbicular and reniform, which are defined by black, slightly above, the former round, the latter large, constricted at middle and extending to well below cell; a black bar from middle of costa and another above reniform at origin of the indistinct double postmedial line, which is strongly bent outwards below costa, then minutely waved and with black and white points beyond it on the veins, slightly incurved below vein 4, some black points beyond it on costa, and a red-brown shade between vein 6 and submedian fold extending to the slight dark subterminal line which is angled outwards between veins 7 and 6 with a blackish mark on inner side and dentate at middle; the extremity of the veins streaked with black except towards apex and tornus; a waved black terminal line; cilia white mixed with brown. Hind wing white, the veins and terminal area suffused with fuscous, narrowing to tornus; a fine waved black terminal line; cilia white tinged with brown at apex; the underside with the costal area irrorated with red-brown, the terminal area suffused with fuscous to submedian fold.

♀. Hind wing more uniformly suffused with fuscous.

Hab. Brazil, Rio Janeiro, 1 ♀, Petropolis (*Doer*), 1 ♀, São Paulo (*D. Jones*), 1 ♂, 1 ♀. *Exp.* 40–42 millim.

3105. Perigea leucostrota, n. sp. (Plate CXV. fig. 22.)

♂. Head and tegulæ ochreous mixed with dark red-brown; palpi with the 2nd joint rufous at sides; thorax grey-white slightly mixed with fuscous; fore and mid tarsi black ringed with white; hind tibiæ and tarsi rufous tinged with ochreous; abdomen grey-white dorsally suffused with fuscous, the anal tuft ochreous white. Fore wing grey-white, the basal area suffused with dark reddish brown to submedian fold, the costa with series of dark brown spots, a medial brown band from costa to median nervure, a red-brown shade from termen at vein 7 to postmedial line, diffused below; subbasal line diffused, whitish, from costa to submedian fold, with slight black marks below and beyond its extremity; antemedial line very indistinct, double, minutely waved, obsolete below submedian fold; claviform represented by a short black streak; orbicular and reniform grey-white with slight white annuli defined by black on lower half, the former very large and extending to submedian fold, the latter with its lower edge indented above median nervure, a short black streak between them in discal fold; traces of a waved medial line from cell to inner margin; postmedial line double, almost obsolete towards costa and inner margin and with black and white points beyond it at middle on the veins, bent outwards below costa, excurved to vein 5, then slightly sinuous and with slight black spot beyond it at submedian fold; traces of a minutely dentate subterminal line between vein 6 and submedian fold; a terminal series of black striæ; cilia chequered blackish and grey. Hind wing fuscous, the inner area greyish; cilia white, brown at base except towards tornus, wholly brown at apex; the underside white suffused with rufous except inner area, a small black discoidal spot filled in with white and indistinct diffused curved postmedial line.

Hab. S.E. Peru, S. Domingo, 1 ♂ type. *Exp.* 34 millim.

3106. Perigea grandirena. (Plate CXV. fig. 23.)

Xanthoptera grandirena, Hmpsn. Ann. S. Afr. Mus. ii. p. 397 (1902).

♀. Head and thorax brownish grey mixed with dark brown; palpi fuscous at sides; tegulæ with black medial line; tarsi black with pale rings; abdomen pale ochreous irrorated with fuscous. Fore wing brownish grey slightly irrorated with dark brown; subbasal line represented by a black spot on costa and point in cell; antemedial line double, the lines well separated and filled in with fuscous from costa to median nervure, oblique, angled inwards on vein 1; claviform represented by a black mark; orbicular and reniform defined by black, large and extending to well below cell, the former oblique, constricted at middle and produced on median nervure to near the latter which is constricted at middle, a brown mark beyond its upper extremity; postmedial line indistinct, double, bent outwards below costa, then oblique, waved, a brown band beyond it not reaching costa but bent outwards to just below

apex, its waved outer edge representing the subterminal line; some small brown spots on postmedial part of costa; a terminal series of small black lunules; cilia chequered brown and grey. Hind wing grey suffused with fuscous except at base; some slight black lunules on termen; cilia yellowish tinged with rufous at base; the underside grey irrorated with fuscous and tinged with rufous except in cell and on inner area, the terminal area suffused with fuscous, a blackish discoidal spot, indistinct curved postmedial line, and terminal series of small black lunules.

Hab. Natal, Victoria Distr. (*Gooch*), 1 ♀ type, Durban (*Leigh*), 1 ♀. *Exp.* 34 millim.

3107. Perigea hippia.

Perigea hippia, Druce, Biol. Centr.-Am., Het. i. p. 277, pl. 27. f. 3 (1889).

♀. Head ochreous white mixed with some rufous; palpi rufous except towards tips; frons with rufous bars at sides; antennæ brown; tegulæ rufous with whitish medial line; thorax white with some brown in prothoracic crest and brown streak on outer edge of patagia; pectus and legs ochreous white, the latter irrorated with brown, the tarsi banded with fuscous; abdomen dorsally brown with white dorsal fascia and slight segmental lines, the ventral surface white. Fore wing white, the basal half red-brown to below cell, with irregular lower edge, the area beyond postmedial line red with brown streaks on the veins between veins 6 and 1; a white mark at base of cell conjoined to a white subbasal bar from costa; some fuscous at base of inner margin; antemedial line indistinctly double, oblique, slightly waved, an oblique white band beyond it, bifurcating at costa, with a small black spot on it below origin of vein 2, and including the orbicular which is round with white annulus and faint brownish centre; reniform with white annulus and faint brownish centre, constricted at middle and angled inwards at lower extremity, in which there is a small brown spot; an irregularly waved line from lower angle of cell to inner margin; postmedial line double at costa, strongly bent outwards below costa, then represented by a series of small brown spots in the interspaces, with double series of brown points beyond them on the veins with white points between them on the brown area, slightly incurved below vein 6, then somewhat oblique, a series of small brown spots beyond it on costa; subterminal line indistinct, yellow, waved, obsolete except on the red area; a terminal series of black points, defined on inner side by white lunules on the brown area; cilia brown with slight white line through them, towards apex white with a small brown spot. Hind wing silky fuscous brown, the cilia white with a brown line near base from apex to vein 2; the underside white, the costal area broadly suffused with red-brown, a slight whitish discoidal lunule, a curved brown postmedial line with broad brown band beyond it leaving some white on termen.

Hab. Mexico, Orizaba; Panama, Chiriqui (*Champion*), 1 ♀ type, Godman-Salvin Coll. *Exp.* 36 millim.

3108. Perigea calma. (Plate CXV. fig. 24.)

Apamea iaspis, Druce, Biol. Centr.-Am., Het. i. p. 273 (nec Guen.).
Chytonyx kalma, Schaus, Trans. Am. Ent. Soc. xxi. p. 225 (1894).

♂. Head and thorax ochreous; palpi mostly black at sides; tegulæ tipped with black; patagia with some black scales at tips; tarsi blackish ringed with ochreous; abdomen ochreous slightly tinged with brown. Fore wing ochreous irrorated slightly with black, the basal half of costal area, the inner medial area and an oblique shade from apex to lower angle of cell suffused with brown, the orbicular, reniform, and postmedial costal area white, the veins streaked with black and white; subbasal line black defined by yellow on outer side, sinuous, from costa to submedian fold, with a curved black mark beyond it in cell and a short streak beyond its lower extremity; antemedial line double filled in with yellowish, minutely dentate below costa, oblique to submedian fold, then angled inwards on vein 1; claviform represented by a slight black streak; orbicular and reniform white defined by black and their centres partly by black, the former round, a black streak between them in discal fold; a slight sinuous medial dark line; postmedial line double, filled in with white towards costa, strongly bent outwards below costa, then minutely dentate and with black points beyond it on the veins, incurved below vein 4, the costa beyond it with alternating black and white striæ; an indistinct minutely waved dark subterminal line, bent inwards between veins 6 and 4 and below vein 2, with black streaks beyond it on veins 8, 7, 6 to the terminal series of small triangular black spots defined by slight whitish lunules on inner side; cilia brown intersected with whitish. Hind wing ochreous white tinged with brown especially on terminal area; cilia white tinged with brown at apex; the underside ochreous white with slight discoidal spot.

♀. Hind wing more uniformly suffused with brown.

Hab. Mexico, Jalapa (*Trujillo, Schaus*), 2 ♂; Guatemala, S. Geronimo (*Champion*), 1 ♂; Panama, Chiriqui (*Champion*), 1 ♂, 2 ♀, Godman-Salvin Coll. *Exp.* 26–30 millim.

3109. Perigea discincta. (Plate CXV. fig. 25.)

Microcælia discincta, Butl. Trans. Ent. Soc. 1879, p. 19.

♀. Head and tegulæ yellowish white mixed with rufous; thorax white; fore tibiæ and the tarsi banded with brown; abdomen dorsally ochreous suffused with brown, the ventral surface white. Fore wing ochreous white irrorated with pale red-brown, the terminal area red-brown, leaving a rounded white patch at apex; subbasal line double filled in with white, curved, from costa to submedian fold, with a red-brown band beyond it ending in a point above vein 1; antemedial line pale brown defined by whitish on inner side, oblique, slightly sinuous, bent inwards to inner margin; orbicular and reniform with white annuli and faint brownish

centres, the former confluent with a somewhat bifid patch below the cell, the latter strongly constricted at middle; an oblique red-brown medial shade from costa to reniform and a slight waved line from cell to inner margin; postmedial line white defined by a red-brown line on inner side, with dark striga at costa and brown mark beyond it, very strongly bent outwards below costa, then straight and erect, some small brown spots beyond it on costa; subterminal line represented by a series of diffused dentate fulvous marks from the apical pale patch to inner margin; a terminal series of black points with white points on their inner side; cilia red-brown with slight pale lines at base and middle. Hind wing reddish brown; cilia white, tinged with brown from apex to vein 2: the underside white irrorated with brown, a diffused brown subterminal band and some black points on apical part of termen.

Hab. Brazil, Amazons, Trombetas (*Trail*), 1 ♀ type. *Exp.* 32 millim.

3110. Perigea siderea. (Plate CXV. fig. 26.)

Prospalta siderea, Leech, Trans. Ent. Soc. 1900, p. 121.

Head and thorax deep red-brown; extremities of 2nd and 3rd joints of palpi, basal joint of antennæ, back of head and base of tegulæ with white points; prothoracic crest with some white scales; metathorax with group of five white points; base of tibiæ, the spurs and tarsal joints with white points; abdomen grey-brown, the dorsal crests blackish. Fore wing deep cupreous brown; some white points at base with three points beyond them in and below cell, followed by an oblique series of three points from costa to cell; antemedial line represented by a series of white points defined by black on and below costa and on the veins, incurved in cell and bent outwards to inner margin; claviform a small round white spot defined by black; orbicular a white point with four white points round it; reniform with two white points in centre surrounded by white points; traces of a sinuous dark medial line; postmedial line faint, dark with white points at costa and beyond it on the veins, strongly bent outwards below costa, excurved to vein 4, then oblique, some white points beyond it on costa, and the veins with slight dark streaks; a subterminal series of small white spots on the veins and in submedian fold, reduced to points on veins 4, 3, 2, somewhat excurved below costa and at middle; a terminal series of white points and a striga above tornus; a series of white points at base of cilia. Hind wing brown with a cupreous tinge; some white on termen at submedian interspace; cilia brownish white with a dark line through them; the underside whitish suffused and irrorated with brown, a dark discoidal spot, minutely crenulate postmedial line, and traces of diffused subterminal line.

Hab. W. China, Omei-shan, 2 ♀, Nitou, 1 ♂, 1 ♀ type, Pu-tsu-fang, 1 ♀, Wa-ssu-kou, 1 ♂, 2 ♀, Chia-kou-ho (*Pratt*), 1 ♀, Ta-chien-lu (*Pratt*), 1 ♂, 1 ♀. *Exp.* 36–38 millim.

3111. Perigea stellata. (Plate CXV. fig. 27.)

Prospalta stellata, Moore, Lep. Atk. p. 111 (1882); Hmpsn. Moths Ind. ii. p. 211.

♂. Head rufous, the basal joint of antennæ with white point in front; thorax deep red-brown, the base of tegulæ rufous, the vertex of thorax and tip of prothoracic crest white; tarsi with white points; abdomen brown, the basal crest white, the others black, the ventral surface rufous. Fore wing cupreous brown suffused with black leaving the discal and submedian folds redder; five white points at base in and below cell followed by an oblique white striga from costa with two points below it; an antemedial series of white points on and below costa and on the veins, defined by black and with white streak before it on inner margin; orbicular represented by a small white spot surrounded by white points; reniform with four white points in centre surrounded by white points; traces of a waved dark medial line; postmedial line indistinct, dark, with white point at costa, strongly bent outwards below costa, then dentate and produced to white points on the veins, oblique below vein 4, some white points beyond it on costa; a subterminal series of small white spots on the veins, reduced to points on veins 4, 3, 2, another series of small white spots just before termen and a series of points on termen; cilia with series of white spots at tips and points at middle towards apex. Hind wing fuscous brown, the cilia white at tips; the underside pale red-brown, the terminal area suffused with fuscous, a faint discoidal lunule and diffused minutely crenulate postmedial line.

Hab. Sikhim (*Dudgeon*, *Sadler*), 3 ♂ type. *Exp.* 40 millim.

3112. Perigea contigua. (Plate CXV. fig. 28.)

Prospalta contigua, Leech, Trans. Ent. Soc. 1900, p. 122.

Head and thorax deep red-brown; basal joint of antennæ white; prothoracic crest with some white scales, the metathorax with white patch; tibiæ at base with white points, the tarsi ringed with white; abdomen brown with the basal crest white. Fore wing black-brown with a cupreous gloss; two white points at base; a subbasal white striga from costa and spot below cell with point in cell further from base; antemedial line represented by a white striga from costa, points on the veins and point on inner margin further from base; claviform a small white spot; orbicular a small round white spot defined by black; reniform with three white marks in centre surrounded by small spots; traces of a waved dark medial line; postmedial line indistinct, dark, with white point at costa, strongly bent outwards below costa, then dentate and produced to white points on the veins, excurved to vein 4, then oblique, some white points beyond it on costa; a subterminal series of small white spots on the veins somewhat excurved below costa and at middle and a terminal series of points. Hind wing fuscous brown, the cilia

whitish brown at tips; the underside fuscous irrorated with white, a dark discoidal lunule and diffused minutely waved postmedial line.

Hab. W. China, Omei-shan, 1 ♂, 2 ♀ type, Nitou, 1 ♂, Pu-tsu-fang, 1 ♂, Wa-ssu-kou, 1 ♂, 2 ♀, Ta-chien-lu (*Pratt*), 1 ♀; Assam, Khásis, 1 ♂. *Exp.* 30–42 millim.

3113. Perigea cyclica, n. sp. (Plate CXV. fig. 29.)

Head, thorax, and abdomen dark brown mixed with greyish; tarsi ringed with whitish. Fore wing dark cupreous brown; a white striga at base followed by a sinuous white subbasal line from costa to submedian fold; antemedial line represented by a waved white striga from costa, then by a faint waved dark line with white points on the veins, bent outwards to inner margin; claviform represented by a white point slightly defined by blackish; orbicular a small white annulus interrupted at middle; reniform an irregular white lunule surrounded by white points; postmedial line indistinct, dark, with white spot at costa, strongly bent outwards below costa, then dentate and produced to white points on the veins, strongly incurved below vein 4 and with white point at inner margin, some small white spots beyond it on costa; subterminal line represented by a series of white points on the veins; a terminal series of white points. Hind wing cupreous brown, the cilia with fine pale line at base; the underside greyish suffused and irrorated with fuscous brown, a slight discoidal lunule and diffused curved postmedial line.

Hab. Japan, Yokohama (*Manley, Pryer*), 1 ♂, 1 ♀, type. *Exp.* 30–32 millim.

3114. Perigea leucospila. (Plate CXV. fig. 30.)

Prospalta leucospila, Wlk. xiii. 1114 (1857); Swinh. Cat. Het. Mus. Oxon. ii. p. 21, pl. 1. f. 3; Hmpsn. Moths Ind. ii. p. 212.

♀. Head and thorax very dark red-brown with a few white scales; 2nd and 3rd joints of palpi white at tips; basal joint of antennæ and a spot behind them white; tips of tegulæ, shoulders and prothoracic crest with white spots; vertex of thorax with white fascia; pectus pale brown; tarsi ringed with white; abdomen brown, the crests dark. Fore wing very dark cupreous brown; two small white spots at base followed by a striga from costa, a curved mark in cell with a point beyond it and a spot below cell; antemedial line represented by a waved white striga from costa and points on the veins; claviform a small round white spot defined by black; orbicular a round white spot defined by black; reniform a round white spot with black lunule in centre and white points round it; postmedial line indistinct, blackish, with white striga from costa, strongly bent outwards below costa, then dentate and produced to black streaks on the veins with white points on them, excurved to vein 4, then oblique, some white points beyond it on costa; subterminal line represented by a series of small white spots

in the interspaces, except above vein 3, with small round spots beyond them, except below apex and above vein 3; cilia with series of white points at base, chequered white and brown at tips. Hind wing cupreous brown; cilia with whitish points at base and white tips; the underside brown irrorated with white, a brown discoidal spot and diffused curved postmedial line.

Hab. Sikhim (*Lidderdale*), 2 ♀. *Exp.* 46 millim. Type in Mus. Oxon.

3115. Perigea albomaculata. (Plate CXV. fig. 31.)

Mamestra albomaculata, Moore, P. Z. S. 1867, p. 52; Hmpsn. Moths Ind. ii. p. 211.

Head and thorax very dark brown, the metathorax with white patch; tarsi ringed with white; abdomen dark brown. Fore wing dark brown with a cupreous gloss and irrorated with a few white scales; a faint waved whitish subbasal line from costa to submedian fold with white points beyond it in and below cell; antemedial line indistinct, black, waved, slightly defined by white scales on inner side; orbicular round, defined by black and with a few white scales representing the annulus; reniform a white spot with slight white lunule before it surrounded by white points; traces of a waved dark medial line; postmedial line indistinct, blackish with white point at costa, strongly bent outwards below costa, then dentate and produced to slight whitish points on the veins, incurved below vein 4, some white points beyond it on costa; a faint irregularly dentate dark subterminal line with waved white striga from costa; a terminal series of white points; cilia with blackish line near base, the tips chequered brown and white. Hind wing dark cupreous brown, the cilia with whitish line near tips; the underside brown irrorated with white, a brown discoidal lunule and diffused curved postmedial line.

Hab. Sikhim (*Atkinson*, *Lidderdale*, *Möller*), 5 ♂, 3 ♀, type. *Exp.* 32–40 millim.

3116. Perigea atricuprea, n. sp. (Plate CXV. fig. 32.)

Head and thorax black-brown with a few white scales; metathorax with white patch; tarsi slightly ringed with white; abdomen fuscous brown. Fore wing glossy black-brown slightly irrorated with white; an indistinct waved whitish subbasal line from costa to submedian fold, with white point beyond it in cell; antemedial line black defined by whitish on inner side, somewhat waved and oblique; orbicular and reniform defined by black, the former round, the latter with white lunule on its outer edge and somewhat angled inwards on median nervure; faint traces of an oblique medial shade from lower angle of cell to inner margin; postmedial line black with white striga from costa, strongly bent outwards below costa, then dentate and produced to short streaks on the veins, incurved below vein 4, some white points beyond it on costa; traces

of a waved dark subterminal line with waved white striga from costa, incurved below vein 3; a terminal series of white points; cilia with a slight waved white line through them. Hind wing greyish suffused with fuscous brown, a faint discoidal spot and sinuous postmedial line; a fine black terminal line and some whitish on termen towards tornus; cilia with a slight whitish line through them; the underside fuscous brown irrorated with white, a brown discoidal lunule and diffused curved postmedial line.

Hab. Sikhim Tibet, Yatung (*Hobson*), 1 ♂, 3 ♀, type. *Exp.* ♂ 34, ♀ 38 millim.

3117. Perigea confluens, n. sp. (Plate CXVI. fig. 1.)

♂. Head and thorax dark brown, frons and base of tegulæ yellowish, the latter with dark medial line; basal joint of antennæ with white point; metathorax with whitish patch; pectus rufous in front, the tarsi blackish ringed with white; abdomen greyish fuscous; the dorsal crests tipped with white, the ventral surface ochreous. Fore wing dark reddish brown suffused with fuscous and irrorated with black; an oblique white striga at base followed by a short streak below cell with point above its extremity and elongate spot in cell; subbasal line represented by a slight white striga from costa; antemedial line indistinct, dark, oblique, waved, slightly defined by brown on inner side, with white striga from costa and point at inner margin; orbicular white with its centre defined by brown and irregular white annulus confluent at lower extremity with the reniform, which is white surrounded by white points and defined below by a curved white mark; postmedial line indistinct, black, slightly defined by pale brown on outer side and with white striæ at costa and inner margin, bent outwards below costa, slightly incurved at discal fold, incurved below vein 4, some white points beyond it on costa; subterminal line represented by small dentate black marks with three small white spots on their outer side at middle and one above tornus, angled outwards at vein 7 and inwards at discal and submedian folds, excurved at middle; a terminal series of small black lunules with white points between them; cilia with series of white spots at tips. Hind wing pure white, the termen suffused with brown from apex to vein 2 and with short streaks on the veins; the underside with the costal and terminal areas slightly irrorated with brown, traces of a waved postmedial line from costa to vein 4, with dark points on veins 7, 6.

Hab. Bahamas (*Bonhote*), 1 ♂ type. *Exp.* 34 millim.

3118. Perigea subornata. (Plate CXVI. fig. 2.)

Perigea subornata, Wlk. xxxii. 682 (1865); Druce, Biol. Centr.-Am., Het. ii. p. 481.
Ochria niveopicta, Butl. P. Z. S. 1878, p. 485.
Perigea hypocritica, Dyar, J. N.Y. Ent. Soc. xv. p. 109 (1907).

♂. Head and thorax reddish brown tinged with grey and irrorated

with a few white scales; extremities of 2nd and 3rd joints of palpi, lower part of frons, basal joint of antennæ, and metathoracic crest white; tarsi ringed with white; abdomen pale grey-brown, the crests tipped with white. Fore wing red-brown tinged with greyish and slightly irrorated with black; a small white spot at base followed by a point on costa and two below cell with small round spot beyond them in cell; antemedial line represented by small spots on costa and inner margin and slight points on the veins; claviform a small white spot; orbicular a small yellowish spot surrounded by four white points; reniform represented by a yellowish-white lunule with four points below it surrounded by white points and curved marks at upper extremity and below; traces of a slight oblique dark line from lower angle of cell to inner margin; postmedial line hardly traceable, with small white spot at costa and series of black and white points beyond it on the veins, strongly bent outwards below costa and oblique below vein 4, some white points beyond it on costa; a subterminal series of white spots in the interspaces, larger between veins 7 and 4 and below 2; a series of small white spots just before termen; a series of white points at base of cilia. Hind wing yellowish white, the veins and terminal area suffused with brown; cilia white; the underside with the costal area and terminal area to vein 4 tinged with red-brown, a faint curved postmedial line from costa to vein 2 with dark points on the veins.

♀. Hind wing wholly suffused with brown.

Hab. Mexico, Orizaba, Jalapa (*Trujillo*), 2 ♂, Godman-Salvin Coll., type † *hypocritica* in Coll. U. S. Nat. Mus.; Jamaica (*Bowry*), 1 ♀ type *niveopicta*; Paraguay, Sapucay (*Foster*), 2 ♂; hab. ign. 1 ♀ type. *Exp.* 32–36 millim.

3119. Perigea stelligera. (Plate CXVI. fig. 3.)

Perigea stelligera, Guen. Noct. i. p. 228, pl. 6. f. 13 (1852).
Perigea pagetolophus, Dyar, J. N.Y. Ent. Soc. xv. p. 109 (1907).

Head and thorax red-brown, the thoracic crests mixed with white; pectus whitish except in front; abdomen pale red-brown. Fore wing red-brown; two white points at base; subbasal white striæ from costa and cell defined on each side by black and with white points beyond them in and below cell; antemedial line represented by a white striga from costa and points on the veins; claviform a small white spot defined by black; orbicular a yellow spot surrounded by white points; reniform a yellow lunule surrounded by white points, all edged by black; faint traces of a waved dark line from lower angle of cell to inner margin; postmedial line represented by a series of small white spots in the interspaces with white points beyond them on the veins all defined by black scales, strongly bent outwards below costa and oblique below vein 4, some white points beyond it on costa; subterminal line represented by a series of small white spots in the interspaces, with slight dentate dark

marks before them and series of white points beyond them before the terminal series of slight black lunules; cilia with a series of small white spots. Hind wing whitish suffused with fuscous brown especially on terminal area, a terminal series of slight dark lunules; cilia white; the underside ochreous white slightly irrorated with brown, a black discoidal lunule, slight waved postmedial line, faint diffused subterminal line, and terminal series of black points from apex to vein 2.

Ab. 1. *pagetolopha*. The thoracic and abdominal crests with rather more white.

Hab. Mexico, Jalapa (*Schaus*), type† ♀ *pagetolophus* in U. S. Nat. Mus.; Brazil, Neu Friburg, Petropolis (*Doer*), 1 ♂, Rio Janeiro (*Wilson*), 1 ♂, 1 ♀. *Exp.* 38–40 millim.

3120. Perigea africana. (Plate CXVI. fig. 4.)

Perigea africana, Schaus, Lep. Sierra Leone, p. 33, pl. 2. f. 10 (1893).

♀. Head and thorax red-brown; basal joint of antennæ with whitish points in front; tip of prothoracic crest with some white scales; tarsi with slight white rings; abdomen red-brown, the basal crest white-tipped. Fore wing red-brown, three white points at base followed by a waved subbasal line from costa to submedian fold: antemedial line represented by small white spots on costa and in submedian fold and point on vein 1; claviform rather dark, slightly defined by black; orbicular a yellowish spot surrounded by four white points; reniform an irregular white mark surrounded by white points and a small spot on outer side, all defined by blackish; traces of a waved dark medial line; postmedial line indistinct, dark, with small white spots at costa and inner margin and points at veins 2, 3, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line represented by a bidentate white spot at apex, points on the veins and striga at inner margin; a terminal series of yellowish points. Hind wing pale reddish brown, the cilia yellow tipped with brown, whitish towards tornus; the underside white, irrorated with brown except on inner area, a brown discoidal spot, sinuous postmedial line, and diffused subterminal line.

Hab. Sierra Leone; Natal, Victoria Distr. (*Gooch*), 2 ♀. *Exp.* 34 millim.

*3121. Perigea purpurea. (Plate CXVI. fig. 5.)

Perigea purpurea, Druce, A. M. N. H. (8) i. p. 297 (1908).

Head and thorax purplish red mixed with a few white and black scales; palpi with some black on 2nd joint above; tegulæ with slight black medial line; tarsi black ringed with white; abdomen yellowish suffused with purplish red, except the sides at base, and slightly irrorated with fuscous, sublateral series of black

spots. Fore wing purplish red irrorated with a few black and white scales; subbasal line white, defined on each side by black scales, sinuous, from costa to submedian fold, where there is a black patch beyond it and another below it on inner margin; antemedial line double, black with some white on it at costa and white points on the veins, angled outwards below costa, then waved and angled inwards on the veins; claviform minute, black; orbicular small, defined by white and black points, oblique, constricted at middle; reniform defined by white and black points and with white centre defined by black, constricted at middle; postmedial line black, double and filled in with white at costa, bent outwards below costa, then strongly dentate and produced to white points on the veins, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line represented by a series of small white spots defined on inner side by dentate black marks and with black streaks beyond them, excurved below vein 7 and at middle; a terminal series of small black lunules with white points between them; cilia with a slight black line through them. Hind wing whitish suffused with fuscous brown except at base, the termen purplish red; a dark point at lower angle of cell, diffused sinuous postmedial line defined by reddish on outer side and terminal series of small black lunules; cilia yellowish white; the underside yellowish white, irrorated with red except on inner area, the postmedial area suffused with red from costa to vein 2, a black discoidal spot, crenulate postmedial line from costa to submedian fold, slight dentate subterminal line, and terminal series of black lunules.

Hab. Peru, La Oroya (*Ockenden*), type † ♂, ♀ in Coll. Druce. *Exp.* 40 millim.

3122. **Perigea parva.** (Plate CXVI. fig. 6.)

Prospalta parva, Leech, Trans. Ent. Soc. 1900, p. 122.

Head and thorax dark red-brown slightly irrorated with white, metathorax with whitish patch; tarsi ringed with white; abdomen red-brown. Fore wing red-brown slightly irrorated with ochreous and white; the basal inner area yellowish; subbasal line represented by a curved yellowish striga from costa, the antemedial line by a small white spot on costa, points nearer the base on subcostal nervure and vein 1 and a yellowish spot on inner margin; orbicular represented by one white point on inner side and two on outer; reniform a small yellowish spot surrounded by white points; postmedial line indistinct, brown, defined on outer side by slight yellowish lunules, with small white spot at costa and white points beyond it on the veins, strongly bent outwards below costa, incurved below vein 4, some white points beyond it on costa; subterminal line represented by a series of small white spots with larger spots below apex and above tornus, somewhat angled outwards at vein 7 and excurved at middle; a terminal series of dark striæ; cilia with series of yellowish points at base. Hind wing whitish, the terminal

area suffused with brown, in female more uniformly suffused; a faint discoidal spot and sinuous postmedial line; cilia yellowish at base, with brown medial line and white tips; the underside white irrorated with brown, a brown discoidal spot, minutely crenulate postmedial line, excurved below costa and incurved below vein 2, traces of a diffused subterminal line and terminal series of small black lunules from apex to vein 2.

Hab. W. China, Chang Yang (*Pratt*), 1 ♂, 4 ♀, type. *Exp.* 30 millim.

3123. Perigea abida.

Hadena abida, Feld. Reis. Nov. pl. 109. f. 7 (1874).

Head and thorax red-brown; palpi with the 2nd joint black, whitish in front and at tip; frons with lateral black bars; tegulæ with black annuli; pectus and legs greyish, the tarsi blackish with pale rings; abdomen grey-brown, the crests black at tips, the anal tuft and ventral surface ochreous. Fore wing pale red-brown slightly tinged with fuscous and irrorated with black; subbasal line represented by double black striæ from costa and cell filled in with yellowish white and with black and white point beyond it in cell; antemedial line defined by yellowish white on inner side towards costa, dentate from costa to median nervure, then oblique, waved; orbicular with white annulus defined by blackish, small elliptical; reniform with white comma-shaped mark in lower part defined by black and surrounded by white points except below; postmedial line double and filled in with white at costa, then indistinct, strongly bent outwards below costa, then dentate and produced to black and white points on the veins, somewhat incurved below vein 4, some white points beyond it on costa; subterminal line represented by a series of rather diffused white spots, reduced to points between veins 4 and 2 and angled outwards at vein 7; a series of small white spots before the terminal series of slight black lunules; cilia with series of white spots at base, chequered white and brown at tips. Hind wing whitish suffused with pale brown, the terminal area darker except towards tornus; cilia white; the underside white, the costal area slightly irrorated with red, a slight dark discoidal spot, postmedial series of points on the veins, diffused subterminal band from costa to vein 5, and terminal series of small black lunules.

Hab. Trinidad, Cuparo (*Kaye*), 1 ♀; Venezuela, Aroa, 1 ♂ Brazil, type † in Coll. Rothschild. *Exp.* 32 millim.

3124. Perigea albolabes. (Plate CXVI. fig. 7.)

Perigea albolabes, Grote, Can. Ent. xii. p. 216 (1880); Druce, Biol. Centr.-Am., Het. i. p. 278 & ii. p. 480; Smith, Cat. Noct. N. Am. p. 154.

Head and thorax red-brown mixed with blackish; palpi black at sides; frons with lateral black bars; tegulæ with slight black

annuli; metathoracic crest tipped with white; tarsi blackish ringed with white; abdomen greyish fuscous, the ventral surface pale rufous. Fore wing purplish red-brown suffused with fuscous, especially on the costal and terminal areas, and irrorated with a few white scales, the veins streaked with blackish; subbasal line represented by slight whitish striæ from costa and cell; antemedial line indistinct, double at costa and with whitish marks on it at costa and submedian fold, waved, somewhat oblique; orbicular with traces of very incomplete pale annulus defined by some black scales, very small, round; reniform represented by a white comma-shaped mark surrounded by some black and white points; postmedial line represented by a series of small black lunules, double, and filled in with whitish at costa, bent outwards below costa, then defined on outer side by small whitish lunules and with series of black and white points beyond it on the veins, incurved below vein 4, some white points beyond it on costa; subterminal line represented by a series of small white lunules with slight dentate black marks before them and black spots beyond them, angled outwards at vein 7 and excurved at middle; a terminal series of black points with white points before them; cilia rufous and black with series of white points at base and waved medial black line. Hind wing whitish suffused with brown, the terminal area rather darker; a fine black terminal line; cilia white tinged with brown; the underside white, the costal area irrorated with red and brown, a small black discoidal spot, waved postmedial line, inwardly diffused subterminal band from costa to vein 2, and terminal series of small black lunules.

Hab. U.S.A., Colorado, New Mexico, Arizona, Prescott, 1 ♂ type; Mexico, Jalisco, Jalapa, 1 ♂; Guatemala, Volcan de Atitlan (*Champion*), 1 ♀; Panama, Chiriqui (*Champion*), 1 ♀, Godman-Salvin Coll. *Exp.* 36–40 millim.

3125. **Perigea albigeroides.** (Plate CXVI. fig. 8.)

Perigea albigeroides, Dogn. Ann. Soc. Ent. Belg. xli. p. 412 (1897).

Head and thorax pale reddish brown; palpi blackish at sides; patagia fuscous at tips; tarsi blackish with whitish rings; abdomen pale reddish brown, with sublateral series of black points. Fore wing reddish brown irrorated with black and largely suffused with fuscous, the veins streaked with black; a blackish point at base below costa; the subbasal line angled outwards below costa, then waved to submedian fold and defined by greyish on outer side; the antemedial line indistinct, double, oblique, angled inwards on subcostal nervure and outwards above inner margin; claviform small, defined by blackish; orbicular small, round, its centre defined by black and with pale annulus defined by black; reniform similar but incomplete, and with some white on its lower part; the postmedial line indistinct, double, minutely waved, bent outwards below

costa, slightly angled inwards in discal fold and incurved below vein 4; the subterminal line ochreous, minutely waved, excurved at vein 7 and middle and with a series of small prominent dentate black marks on its inner side; a series of ochreous and black points just before termen; cilia intersected with ochreous. Hind wing whitish tinged with brown, the veins brown, the terminal half suffused with fuscous; cilia white; the underside with the costal area irrorated with reddish brown, the terminal area with dark brown, a dark discoidal point and postmedial punctiform line except on inner area.

Hab. Ecuador, Loja, type† ♂ in Coll. Dognin; Peru, Oconeque (*Ockenden*), 2 ♂, 1 ♀. *Exp.* 40 millim.

3126. Perigea roxana.

Mamestra roxana, Druce, Biol. Centr.-Am., Het. ii. p. 476, pl. 93. f. 17 (1898).

Perigea lucetta, Smith, Proc. U.S. Nat. Mus. xxii. p. 474 (1900); Dyar, Cat. Lep. N. Am. p. 112.

♀. Head and thorax red-brown slightly mixed with fuscous; palpi with some black at sides; frons with lateral black bars; tegulæ with black annuli; tarsi black with pale rings; abdomen dorsally brown suffused with fuscous, ventrally ochreous. Fore wing purplish red-brown; subbasal line represented by a dark striga from costa and patches of black and white scales below cell and on inner margin; antemedial line double at costa, then waved, somewhat oblique; claviform small, defined by black; orbicular with whitish annulus defined by black, small, elliptical; reniform ochreous, slightly defined by black, and with some white points on its edges and a small white spot in lower part defined by black on inner side; an indistinct, diffused medial line, oblique from costa to median nervure; postmedial line black, bent outwards below costa, then very minutely waved and with series of black and white points beyond it on the veins, excurved to vein 4, then incurved; subterminal line represented by a series of diffused yellowish-white lunules, reduced to points between veins 4 and 2, defined on inner side by small dentate black spots and by small spots on outer, angled outwards at vein 7 and excurved at middle; a series of yellowish-white points before the terminal series of black points; cilia fuscous, with pale yellow lines at base and middle. Hind wing yellowish brown, rather paler at base; the cilia yellowish white; the underside yellowish white irrorated with fuscous, a black discoidal spot, strong curved postmedial line, broad subterminal band except towards tornus, diffused and shading to red on inner side, and terminal series of points.

Hab. U.S.A., Colorado; Mexico, Jalapa (*Trujillo*), 1 ♀ type, Godman-Salvin Coll., Orizaba. *Exp.* 46 millim.

3127. Perigea dolorosa.

Mamestra dolorosa, Wlk. xxxii. 667 (1865); Hmpsn. Moths Ind. ii. p. 211.
Hadena taprobanæ, Feld. Reis. Nov. pl. 110. f. 3 (1874).
Euplexia albomaculata, Semp. Schmett. Phil. p. 515, pl. 60. f. 2 (nec Moore).

Head and thorax fuscous mixed with some ochreous; palpi black, the 2nd and 3rd joints white at tips; frons with black bars; tegulæ with black annuli; prothoracic crest tipped with ochreous, the metathorax with ochreous patch; pectus and legs ochreous white irrorated with brown, the tarsi black with pale rings; abdomen ochreous suffused with fuscous brown. Fore wing fuscous; subbasal line represented by ochreous striæ from costa and cell; some ochreous and black scales on inner margin before the antemedial line, which is indistinct, waved, black, interrupted, defined on inner side by ochreous striæ at costa and inner margin and ochreous point at submedian fold; orbicular with incomplete whitish annulus defined by black, small, irregularly elliptical; reniform with irregular white lunule in centre surrounded by ochreous points defined by black, constricted at middle; postmedial line with white spot at costa, strongly bent outwards below costa, then defined by slight ochreous annuli on outer side, dentate and produced to black and white points on the veins, oblique below vein 4, some white points beyond it on costa; subterminal line represented by a series of ochreous-white points defined on inner side by small dentate black marks, excurved below vein 7 and at middle; a series of minute white points just before termen; cilia fuscous, with series of ochreous-white points at base. Hind wing white tinged with brown, the veins and terminal area suffused with fuscous brown, a terminal series of black striæ defined by whitish on inner side; cilia ochreous white with slight brown line through them on apical half; the underside white, the costal area tinged with ochreous and irrorated with fuscous, a discoidal point, slight diffused waved postmedial line from costa to vein 2, and diffused subterminal band.

Hab. C. China, Kiukiang (*Pratt*), 1 ♀; Bombay (*Wilkinson*), 1 ♀; Madras, Nilgiris (*Hampson*), 1 ♂, 1 ♀; Ceylon, Kandy (*Templeton*), 1 ♂, 1 ♀ type; Philippines, Manila; Fiji (*Mathew*), 2 ♀. *Exp.* 36–40 millim.

Larva. Brown. Food-plant, *Conyza balsamifera*.

3128. Perigea galaxia. (Plate CXVI. fig. 9.)

Perigea galaxia, Butl. P. Z. S. 1883, p. 159; Hmpsn. Moths Ind. ii. p. 211.

Head and thorax fuscous brown mixed with grey-white; tarsi black ringed with white; abdomen grey suffused with fuscous. Fore wing grey suffused with fuscous and irrorated with white; subbasal line represented by a white striga from costa; antemedial

line black defined on inner side by white towards costa, waved, somewhat oblique; orbicular white defined by black, small, round; reniform a white lunnule with some black points on it, its upper and lower extremities surrounded by white points; a diffused medial line excurved at middle; postmedial line black with white bar at costa, bent outwards below costa, then dentate and produced to black and white points on the veins, incurved below vein 4, some white points beyond it on costa; subterminal line defined by diffused fuscous on inner side, angled outwards at vein 7 and excurved at middle; a terminal series of black points; cilia with a series of white points at base. Hind wing grey-brown with a fuscous tinge; cilia whitish at tips; the underside white irrorated with fuscous, a discoidal lunule filled in with white, bisinuate postmedial line, and traces of diffused subterminal band.

Hab. Punjab, Kulu, Sultanpur *(G. Young)*, 3 ♂, 2 ♀, Simla *(Harford)*, 1 ♂, 3 ♀, Dharmsála *(Hocking)*, 4 ♂, 2 ♀, type. *Exp.* 30–38 millim.

3129. Perigea dinava. (Plate CXVI. fig. 10.)

Perigea dinawa, Beth.-Baker, Nov. Zool. xiii. p. 194 (1906).

Head and thorax red-brown mixed with some ochreous; tarsi blackish ringed with white; abdomen pale red-brown. Fore wing purplish brown slightly irrorated with whitish; a diffused streak of black and whitish scales below base of cell; subbasal line represented by an oblique striga from costa defined by whitish on outer side; some diffused black scales above inner margin before the antemedial line, which is hardly traceable, oblique, dentate, defined by whitish on inner side towards costa and with white point on vein 1; claviform a slight dentate black mark; orbicular whitish defined by black and its centre slightly by brown on inner side, small, oblique elliptical, irregular; reniform whitish, irregular, incompletely defined by black, its centre slightly defined by brown above and with black point on lower inner side, its annulus broken up into white points; postmedial line indistinct, with white spot at costa, strongly bent outwards below costa, then minutely dentate with slight pale lunules on outer side and black and white points beyond it on the veins, oblique below vein 4, some white points beyond it on costa; subterminal line represented by a series of yellowish-white lunules defined on inner side by small dentate black marks, somewhat angled outwards at vein 7 and excurved at middle; a terminal series of slight black lunules; cilia with a series of whitish points at base. Hind wing pale purplish pink, the costal area whitish; a fine brown terminal line; cilia red-brown at base, whitish at tips; the underside red-brown irrorated with white and black scales, the cell and inner area white, a small discoidal lunule filled in with white, a minutely crenulate postmedial line, and terminal series of small black lunules.

Hab. Borneo, Kuching *(Shelford)*, 1 ♀; Br. New Guinea, Dinawa *(Pratt)*, 1 ♂, 1 ♀. *Exp.* 44 millim. Type † in Coll. Bethune-Baker.

3130. Perigea punctirena. (Plate CXVI. fig. 11.)

Hadena punctirena, Wlk. xi. 586 (1857).
Hadena præcellens, Möschl. Abh. Senck. Nat. Ges. xiv. p. 49, f. 21 (1886).

Head and thorax red-brown mixed with fuscous; palpi whitish in front and with brown patch on 2nd joint; pectus with some white; the tarsi blackish ringed with white; abdomen greyish suffused with fuscous brown, the anal tuft rufous, the ventral surface whitish suffused with rufous. Fore wing bright rufous tinged in parts with fuscous and with slight dark irroration; subbasal line double, waved, from costa to submedian fold; a blackish patch on inner margin near base; antemedial line double, oblique, dentate, bent inwards in cell; claviform moderate, defined by black; orbicular and reniform defined by black, the former round, the latter somewhat constricted at middle, the inner part of centre darker and with some white points on outer edge; an indistinct medial line, oblique waved from costa to below angle of cell, then incurved; postmedial line double, the outer line indistinct, bent outwards below costa, then minutely dentate, angled inwards below vein 7, oblique below vein 5 and angled outwards on vein 1, some white points beyond it on costa; subterminal line greyish defined on inner side by fuscous brown suffusion emitting streaks to postmedial line above veins 7, 5, 4, 2, slightly angled outwards at vein 7 and excurved at middle; the terminal area dark brown with black streaks in the interspaces; a fine waved black terminal line; cilia dark brown with slight punctiform pale line at base followed by a dark line. Hind wing white; the veins streaked with brown towards termen which is suffused with red-brown from apex to submedian fold; cilia white, tinged with rufous to vein 2; the underside with the costal area and terminal area to vein 2 irrorated with red-brown, a postmedial series of minute dark streaks on the veins and a terminal series of slight black lunules.

Hab. Jamaica; Haiti (*Tweedie*), 1 ♂, 1 ♀ type. *Exp.* 34 millim.

3131. Perigea dentistrigata. (Plate CXVI. fig. 12.)

Mamestra dentistrigata, Wlk. xv. 1685 (1858).

Head and tegulæ reddish ochreous mixed with black; palpi and frons black at sides, the tegulæ with black annuli; thorax black irrorated with grey; tarsi ringed with white; abdomen grey suffused with fuscous, the crests black. Fore wing fuscous slightly tinged with ochreous and irrorated with black; a faint curved black subbasal line from costa to submedian fold; antemedial line very indistinct, double filled in with greyish, waved; claviform large, defined by black; orbicular with faint pale annulus defined by black, round; reniform with faint pale annulus defined by black, its lower part filled in by a white patch typically broken up into dentate marks; an indistinct waved medial line; postmedial line slightly defined by ochreous on outer side, bent outwards below costa, then

dentate, incurved below vein 4, some whitish points beyond it on costa; subterminal line represented by a series of small ochreous white marks defined on inner side by dentate black marks, excurved below vein 7 and at middle and angled inwards at discal and submedian folds; a terminal series of black points with white points on their inner side; cilia with a fine pale line at base. Hind wing white tinged with brown, the terminal area broadly suffused with fuscous; a waved black terminal line; cilia white; the underside white, the costal and terminal areas irrorated with brown, a black discoidal lunule, minutely waved postmedial line from costa to vein 2, and terminal series of small black lunules.

Hab. Brazil, Rio Janeiro (*Wilson*), 1 ♀, Petropolis (*Doer*), 1 ♂. *Exp.* 40 millim. Type † ♀ in Mus. Oxon.

3132. Perigea circuita. (Plate CXVI. fig. 13.)

Perigea circuita, Guen. Noct. i. p. 227 (1852); Staud. Cat. Lep. pal. p. 170.
Perigea decens, Wlk. x. 276 (1858).
Celæna prolifera, Wlk. xi. 732 (1857).
Perigea punctosa, Wlk. xi. 734 (1857).
Hadena pupulla, Möschl. Abh. Senck. Nat. Ges. xiv. p. 50, f. 22 (1886).

♂. Head and thorax red-brown slightly mixed with white; palpi black; the extremity of 2nd joint white; frons with lateral black bars; tegulæ with faint black annuli; pectus white except in front, the tarsi black ringed with white; abdomen ochreous white dorsally suffused with brown, the crests whitish at tips. Fore wing red-brown slightly irrorated with white, the veins with faint dark streaks; subbasal line represented by a faint whitish striga from costa and diffused spot below cell; antemedial line very indistinct, dark, defined on inner side by some whitish scales, waved; claviform represented by a black point at its extremity; reniform with white spot in lower part with yellowish lunule below it, one white point on inner side and two on outer, all defined by black, two white points defining upper part, strongly constricted at middle; post-medial line indistinct, with white point at costa, strongly bent outwards below costa, then minutely dentate and produced to black and white points on the veins, incurved below vein 4, some white points beyond it on costa; subterminal line represented by traces of a series of black points in the interspaces; a series of white points in the interspaces just before termen and a series on termen at the veins. Hind wing yellowish white, the veins and inner area tinged with brown, the terminal area suffused with brown from apex to submedian fold; cilia white; the underside with the costal area and terminal area to vein 2 irrorated with red and brown, a black discoidal point.

♀. More fuscous; hind wing with the basal area tinged with fuscous, the veins fuscous.

Hab. Panama, La Chorerra (*Dolby-Tyler*), 1 ♂; Bahamas (*Neville Chamberlain*), 1 ♀, Jamaica; Haiti (*Tweedie*), 1 ♀ type *punctosa*;

St. Thomas, type † in Mus. Paris; St. Vincent (*H. H. Smith*), 1 ♀; Peru, Lima, 1 ♀; Brazil, Organ Mts., Tijuca (*Wagner*), 1 ♀; Paraguay, Sapucay (*Foster*), 3 ♀; hab. ign. 1 ♂, 1 ♀, types *decens* and *prolifera*; Grand Canary. *Exp.* 32–36 millim. Type † in Mus. Paris.

3133. Perigea albigera. (Plate CXVI. fig. 14.).

Perigea albigera, Guen. Noct. i. p. 228 (1852).
Apamea intermittens, Wlk. xv. 1686 (1858).
Perigea berinda, Druce, Biol. Centr.-Am., Het. i. p. 278 (part.).

♂. Head and tegulæ red-brown, the latter with black annuli; sides of palpi and frons black; thorax fuscous black with some rufous and black scales on dorsum; tarsi black ringed with white; abdomen grey, the crests brownish, the ventral surface reddish. Fore wing red-brown almost wholly suffused with fuscous except on basal inner area and on each side of postmedial line; subbasal line black defined by whitish on outer side, waved, from costa to submedian fold where there is some blackish beyond it; a slight black mark above inner margin before the antemedial line, which is indistinct, waved, oblique; claviform represented by a small black mark; orbicular defined by black and with a few whitish scales representing its annulus, small, round; reniform represented by an oblique white striga in lower part, its upper part defined by some black and white points; an indistinct medial line, oblique from costa to lower angle of cell; postmedial line double and filled in by whitish at costa, strongly bent outwards below costa, then oblique, very slightly waved and with black and white points beyond it on the veins; some white points beyond it on costa; subterminal line represented by faint diffused reddish marks defined on inner side by slight dentate black marks, bent outwards at veins 7, 6 and incurved at discal and submedian folds; a terminal series of black points; cilia with fine pale line at base. Hind wing yellowish white, the terminal area suffused with fuscous brown from apex to vein 2; a waved black terminal line; cilia white tinged with brown at tips towards apex; the underside white, the costal area irrorated with red, a small black discoidal spot, postmedial and subterminal series of points on the veins from apex to vein 3 and terminal series of small lunules.

♀. Hind wing more uniformly suffused with fuscous.

Hab. Mexico, Tabasco (*H. H. Smith*), 1 ♀, Godman-Salvin Coll; Jamaica, Moneague (*Walsingham*), 1 ♂, Cuba, Santiago (*Schaus*), 2 ♂, 4 ♀, Alcadro (*Schaus*), 1 ♀, Matanzas (*Schaus*), 1 ♀, Baracoa (*Schaus*), 1 ♀; Haiti, (*Tweedie*), 1 ♀, type *intermittens*; Guadaloupe; St. Vincent (*H. H. Smith*), 1 ♂, 1 ♀; Grenada (*H. H. Smith*), 2 ♂, 2 ♀; Paraguay, Sapucay (*Foster*), 1 ♂, 1 ♀. *Exp.* 28–34 millim.

*3134. Perigea carcoma. (Plate CXVI. fig. 15.)

Perigea carcoma, Dogn. Ann. Soc. Ent. Belg. xli. p. 28 (1897).

♂. Head and thorax brown mixed with fuscous and with a few white scales; palpi blackish; pectus, legs, and abdomen pale brown, the last with the dorsal crest on basal segment black. Fore wing grey-brown irrorated and suffused with fuscous, the scaling smooth and silky; the subbasal line very indistinct; the antemedial line indistinct, double, waved, with slight white points on and below costa; orbicular small, round, irrorated with white and slightly defined by black; reniform whitish, its centre incompletely defined by black; a slight oblique medial shade from lower angle of cell to inner margin; the postmedial line indistinct, somewhat dentate, bent outwards below costa, oblique below vein 4 and with a series of black points on the veins beyond it; the subterminal line greyish defined by darker suffusion on inner side, excurved at vein 7 and middle and angled inwards in discal fold; a terminal series of black points. Hind wing whitish tinged with brown, the terminal area suffused with brown; the underside with the costal and terminal areas irrorated with brown, a slight discoidal spot and traces of a postmedial line on costal area.

Hab. Ecuador, Loja, type † ♂ in Coll. Dognin. *Exp.* 28 millim.

3135. Perigea sufficiens. (Plate CXVI. fig. 16.)

Perigea sufficiens, Wlk. xv. 1692 (1858).

♀. Head and thorax brownish grey slightly mixed with black; palpi with black bands near extremities of 2nd and 3rd joints, which are white; frons white with black bar above; tarsi black ringed with white; abdomen white with diffused brown dorsal bands. Fore wing brownish grey slightly irrorated with black; a black point at base; subbasal line represented by slight double blackish striæ from costa and a point below cell; antemedial line represented by slight double blackish striæ from costa, then very indistinct, oblique, waved; claviform represented by a small black spot; orbicular defined by black at sides only, oblique elliptical, its lower extremity connected by a black streak with the reniform which is defined by black except above, constricted at middle, its centre defined by blackish and with black point on lower inner edge and a short black streak beyond it above vein 4; an indistinct waved medial line, oblique towards costa; postmedial line very indistinct, double, bent outwards below costa, then oblique dentate, some white points beyond it on costa; subterminal line represented by a series of small blackish dentate marks, angled outwards at veins 7, 6, 4, 3; a prominent terminal series of small black lunules. Hind wing white, the terminal area suffused with yellow-brown; a waved dark terminal line; cilia white; the underside with the costal area irrorated with brown, a black discoidal point, post-

medial series of minute streaks on the veins and terminal series of points.

Hab. Haiti (*Tweedie*), 1 ♀ type. *Exp.* 34 millim.

3136. Perigea concisa. (Plate CXVI. fig. 17.)

Laphygma concisa, Wlk. ix. 191 (1856); Druce, Biol. Centr.-Am., Het. ii. p. 481 (part.).
Caradrina consocia, Wlk. x. 299 (1856).
Perigea centralis, Wlk. xi. 734 (1857).
Perigea imbella, Wlk. xv. 1692 (1858).
Caradrina laphygmoides, Wlk. xv. 1694 (1858).
Perigea plumbago, Herr.-Schäff. Corresp.-blatt. zool.-min. Ver. Regensb. xxii. p. 118 (1868).

♂. Head and thorax pale grey slightly mixed with fuscous; palpi with some black at sides; frons with lateral black bars; tegulæ with black annuli; tarsi blackish with pale rings; abdomen ochreous white irrorated with fuscous, the crests black at tips. Fore wing pale grey irrorated and suffused with fuscous, a black point below base of costa followed by the double sinuous subbasal line with curved mark at lower extremity; antemedial line double filled in with yellow, the inner line indistinct, oblique, waved; claviform represented by a black point at its extremity; orbicular and reniform yellow defined by black and their centres also by black, the former rather irregular and constricted at middle, the latter constricted at middle and with its annulus broken up into small spots; a dark medial line diffused at costa and oblique to median nervure; postmedial line defined by yellow on outer side, bent outwards below costa, then minutely dentate and produced to black and yellow points on the veins, oblique below vein 4, some points beyond it on costa; subterminal line yellowish defined on inner side by fuscous suffusion and with short black streaks before it in the interspaces, angled outwards at vein 7 and excurved at middle; a series of yellowish points before the terminal black points; cilia yellow and fuscous. Hind wing white, the termen suffused with fuscous from apex to vein 2; cilia white; the underside with the costal area irrorated with fuscous, a terminal series of black points.

♀. Hind wing more suffused with fuscous.

Hab. U.S.A., Florida, Miami (*Schaus*), 1 ♂; Mexico, Jalapa (*Trujillo*), 1 ♀, Godman-Salvin Coll.; Bahamas, Nassau (*Sir G. Carter*), 1 ♂; Cuba, Santiago (*Schaus*), 4 ♂, 3 ♀, Matanzas (*Schaus*), 1 ♀; Haiti (*Tweedie*), 1 ♂, 1 ♀ type *imbella*; St. Vincent (*H. H. Smith*), 1 ♂; Barbados (*Frampton*), 1 ♂, 2 ♀; Trinidad (*Kaye*), 1 ♀; Brazil, Itaparica (*Meade-Waldo*), 1 ♂, Bahia (*Oldfield Thomas*), 1 ♀, Organ Mts., Tijuca (*Wagner*), 1 ♀, Rio Janeiro, 1 ♀; Paraguay, Sapucay (*Foster*), 1 ♂, 1 ♀; Argentina, Gran Chaco, Florenzia (*Wagner*), 1 ♂, Goya (*Perrins*), 1 ♀; hab. ign., 1 ♂, 4 ♀, type and types *centralis* and *consocia*. *Exp.* 26–30 millim.

3137. Perigea confundens. (Plate CXVI. fig. 18.)

Mamestra confundens, Wlk. Char. undescr. Het. p. 69 (1869).
Perigea aroana, Beth.-Baker, Nov. Zool. xiii. p. 194 (1906).

♂. Head and thorax reddish brown mixed with white and black; palpi black, the extremity of 2nd and 3rd joints white; frons white below, black above; tegulæ with medial black line; tarsi blackish ringed with white; abdomen white tinged with fuscous, the dorsal crests blackish. Fore wing ochreous white tinged with brown and irrorated with black, the costal area irrorated with white beyond middle, the veins streaked with black; subbasal line indistinct, double, waved, from costa to vein 1; antemedial line double filled in with white, minutely waved, oblique; claviform small, faintly defined by black; orbicular very small, with black centre and white annulus defined by black; reniform white defined by black and its centre by black, its annulus broken up into spots; a black medial shade; postmedial line defined by white on outer side, bent outwards below costa, then minutely dentate and produced to black and white points on the veins, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line defined by fuscous suffusion on inner side, excurved below costa and at middle; a terminal series of black points defined by slight whitish lunules; cilia whitish and brown. Hind wing pure white with broad fuscous terminal band from costa to vein 2; a fine dark terminal line; cilia white; the underside with the costal area irrorated with brown, the terminal area with fuscous from costa to vein 2.

Ab. 1. Hind wing slightly tinged with brown.

Hab. Br. New Guinea, Sogeri, 1 ♂, Aroa R., type † ♂ *aroana* in Coll. Bethune-Baker; Queensland, Brisbane (*Turner*), 2 ♂. *Exp.* 30–32 millim.

3138. Perigea sutor. (Plate CXVI. fig. 19.)

Perigea sutor, Guen. Noct. i. p. 231 (1852).
Perigea turpis, Guen. Noct. i. p. 232 (1852).
Perigea indecisa, Wlk. xi. 733 (1857).
Xylina claufacta, Wlk. xi. 760 (1857); Smith, Cat. Noct. N. Am. p. 153.
Perigea otiosa, Wlk. xv. 1693 (1858).
Perigea paupera, Wlk. xv. 1693 (1858).
Xylina detrecta, Wlk. xxxiii. 750 (1865).
Segetia fabrefacta, Morr. Proc. Bost. Soc. N. H. xvii. p. 146 (1874); Druce, Biol.-Centr. Am., Het. i. p. 279.
Perigea cervina, Smith, Proc. U. S. Nat. Mus. xxii. p. 475 (1900); Dyar, Cat. Lep. N. Am. p. 112.

Head and thorax pale greyish rufous mixed with fuscous; palpi black at sides; frons with lateral black bars; tegulæ with faint dark medial line; tarsi blackish with pale rings; abdomen greyish ochreous dorsally suffused with fuscous. Fore wing pale greyish rufous slightly tinged with fuscous; subbasal line represented by double blackish striæ from costa and cell; antemedial line indistinct, double at costa, then oblique, waved, angled inwards at vein 1; claviform

minute, defined by black; orbicular and reniform incompletely defined by black, the former oblique elliptical, the latter irregular, constricted at middle, with whitish points on annulus and blackish points round centre, slight black streaks before it above median nervure and beyond it above vein 4; traces of a waved medial line; postmedial line indistinct, double, bent outwards below costa, then minutely dentate and produced to black and white points on the veins, incurved below vein 4; some pale points beyond it on costa; subterminal line slight, defined by fuscous suffusion on inner side and with minute black streaks before it in the interspaces, slightly angled outwards at veins 7, 6, 4, 3; a waved black terminal line with white points on the veins and black points in the interspaces; cilia brown with fine pale line at base. Hind wing ochreous white, the veins and terminal area suffused with fuscous brown; cilia white; the underside white, the costal area irrorated with brown, traces of a dark waved postmedial line from costa to vein 6.

Hab. U.S.A., Massachusetts, New York, 1 ♂ type *fabrefacta*, Distr. of Columbia, Alabama, 1 ♀, Florida (*Doubleday*), 1 ♂ type *claufacta*, Texas, 1 ♂; Mexico, Jalapa (*Trujillo*), 3 ♀, Las Vigas (*Hoege*), 1 ♂, Presidio (*Forrer*), 2 ♀, Teapa (*H. H. Smith*), 2 ♂, Coatepec (*Brook*), 1 ♂; Guatemala, Cerro Zunil (*Champion*), 1 ♂, El Zumbador (*Champion*), 1 ♂, Cahabon (*Champion*), 1 ♂, S. Geronimo (*Champion*), 1 ♂, San Isidro (*Champion*), 1 ♂; Honduras (*Dyson*), 1 ♂ type *detrecta*; Nicaragua, Chontales (*Janson*), 1 ♀; Costa Rica, Candelaria Mts. (*Underwood*), 1 ♀, Irazu (*Rogers*), 1 ♂; Panama, Chiriqui (*Champion, Ribbe*), 1 ♂, 3 ♀, Godman-Salvin Coll.; Bahamas, Andros (*Neville Chamberlain*), 1 ♂; Jamaica (*Gosse*), 1 ♀ type *indecisa*, Gordontown (*Kaye*), 1 ♂; Cuba, Santiago (*Schaus*), 1 ♂, Baracoa (*Schaus*), 4 ♂, 2 ♀; Haiti (*Tweedie*), 1 ♀ type *otiosa*; St. Vincent (*H. H. Smith*), 1 ♂; Grenada (*H. H. Smith*), 1 ♂, 1 ♀; Barbados (*Frampton*), 2 ♂, 1 ♀; Venezuela (*Dyson*), 1 ♀ type *paupera*; Br. Guiana, Rockstone (*Kaye*), 2 ♀; Brazil, Para (*Austen*), 2 ♂, Manâos (*Trail*), 1 ♂, R. Madeira (*Trail*), 1 ♀, R. Tapajos (*Trail*), 1 ♂, Itaparica (*Meade-Waldo*), 1 ♀, Espiritu Sto., 1 ♀; Peru, Hauncabamba, 2 ♀, Lima, 1 ♀; Paraguay, Sapucay (*Foster*), 3 ♂, 3 ♀; Argentina, Gran Chaco, Florenzia (*Wagner*), 1 ♂, Goya (*Perrins*), 4 ♂, 1 ♀. *Exp.* 26–38 millim.

3139. Perigea capensis. (Plate CXVI. fig. 20.)

Apamea capensis, Guen. Noct. i. p. 213 (1852).
Perigea apameoides, Guen. Noct. i. p. 229 (part.).
Caradrina conducta, Wlk. x. 296 (1856); Hmpsn. Moths Ind. ii. p. 211.
Celæna serva, Wlk. xv. 1689 (1858).
Hadena pauperata, Wlk. xv. 1727 (1858).
Mamestra prodita, Wlk. Journ. Linn. Soc. vi. p. 185 (1862).
Perigea inexacta, Wlk. xxxii. 682 (1865).
Perigea canorufa, Wlk. xxxii. 683 (1865).
Perigea illecta, Wlk. xxxii. 684 (1865).
Hadena leonina, Wlk. xxxiii. 735 (1865).

Hadena spargens, Wlk. xxxiii. 739 (1865).
Hadena funesta, Wlk. xxxiii. 740 (1865).
Perigea centralis, Moore, Lep. Ceyl. iii. p. 28, pl. 147. f. 2 (nec Wlk.).
Perigea meleagris, Saalm. Lep. Madag. p. 271, f. 228 (1891).

♂. Head and thorax rufous mixed with some whitish and fuscous; palpi black at sides; frons with lateral black bars; tegulæ with curved blackish medial line; tarsi black with pale rings; abdomen ochreous tinged with rufous and dorsally suffused with fuscous, the anal tuft pale rufous. Fore wing rufous suffused with fuscous, irrorated with grey on costal area, below and beyond lower angle of cell, before subterminal line and on terminal area, the veins with dark streaks; subbasal line black, waved, from costa to vein 1; antemedial line defined by yellowish on inner side, oblique, waved, angled inwards to black and white points on the veins; claviform minute, defined by black; orbicular small with slight pale annulus defined by black, constricted at middle, its centre defined by brown; reniform with the centre yellowish above and white below, defined by brown and with small white spots defined by black round its lower part; faint traces of a waved medial line; postmedial line black defined by yellowish on outer side, bent outwards below costa, then dentate and produced to black and white points on the veins, incurved below vein 4, some white points beyond it on costa; subterminal line slight, whitish defined on inner side by small dentate black marks, dentate, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules; cilia with a blackish line through them. Hind wing yellowish white, the veins and terminal area suffused with brown or wholly suffused with brown; cilia yellowish white, tinged with brown at tips except towards tornus; the underside with the costal area tinged with rufous, the terminal area suffused with fuscous from costa to vein 2, a small discoidal spot, traces of a waved postmedial line from costa to vein 2, and terminal series of small black lunules.

♀. Hind wing more suffused with brown.

Hab. Sierra Leone (*Foxcroft*), 1 ♀ type *leonina*; Ashanti, Kumasi (*Whiteside*), 1 ♂; Congo (*Richardson*), 1 ♂, 2 ♀, type *conducta*; St. Helena (*Wollaston*), 1 ♂, 3 ♀; Egypt, Cairo (*Graves*), 1 ♀; Sokotra, Adho Dimellus (*O.-Grant*), 2 ♂, 2 ♀; Br. E. Africa (*Gregory*), 1 ♀, Machakos (*Crawshay*), 1 ♂, Kikuyu (*Crawshay*), 1 ♂, Eb Urru (*Betton*), 1 ♀; Uganda, Entebbe (*Minchin*), 1 ♀, Ruwenzori, 1 ♀; Mashonaland, Salisbury (*Marshall*), 1 ♀; Transvaal (*Cholmley*), 2 ♀, Tweefontein (*Jansi*), 1 ♀; Orange R. Col., Vredefort (*Hamilton*), 1 ♀; Natal, Estcourt (*Hutchinson*), 2 ♀, Durban (*Gueinzuis, Gooch*), 2 ♂ type *pauperata*; C. Colony (*Dreye*), 1 ♀ type *inexacta*; Madagascar; Mauritius, Curepipe (*Tulloch*), 1 ♂; Aden (*Yerbury, J. J. Walker*), 1 ♂, 1 ♀; C. China, Kiukiang (*Pryer*), 2 ♂, Ichang (*Mrs. Pratt*), 1 ♂, 1 ♀; W. China, Chang Yang (*Pratt*), 1 ♀; Hong Kong (*J. J. Walker*), 1 ♀; Formosa (*Hobson*), 1 ♂, 1 ♀; Punjab, Kulu, Saltanpur, 3 ♂, 3 ♀, Simla (*Swinhoe, Harford*), 2 ♂, 2 ♀, Dharmsála (*Hocking*),

2 ♂, 4 ♀, Manpuri, 1 ♂; Sikhim Tibet, Yatong (*Hobson*), 1 ♀; Sikhim (*Dudgeon*), 2 ♂, 2 ♀; Assam, Naga Hills (*Doherty*), 1 ♂; Bengal, (*James*), 1 ♀ type *illecta*, Calcutta, 2 ♀; Bombay (*Swinhoe*), 1 ♀, Mhow (*Swinhoe*), 4 ♂; Madras, Nilgiris (*Hampson*), 2 ♂, 1 ♀, Coimbatore (*Walhouse*), 1 ♂, 1 ♀, types *canorufa* and *serva*, Travancore, Permád (*Mrs. Imray*), 1 ♂; Ceylon, 2 ♂; Burma, Moulmein (*Clerck*), 1 ♀ type *spargens*; Andamans, 1 ♀; Perak, Goping (*Kunstler*), 1 ♂; Singapore (*Ridley*), 2 ♀; Borneo, Sarawak, type † *prodita* in Mus. Oxon.; Philippines, Luzon, 1 ♀; Talaut Is., 1 ♀; Java (*Horsfield*), 5 ♂, 5 ♀; Br. N. Guinea, Dinawa (*Pratt*), 1 ♀; Solomon Is., Alu (*Woodford*), 1 ♀; Marshall Is. (*Mathew*), 2 ♂, 1 ♀; Fiji, 1 ♀; Queensland, Brisbane (*Turner*), 1 ♂, 1 ♀, Moreton Bay (*Diggles*), 1 ♀ type *funesta*. *Exp.* 26–38 millim.

Larva. Moore, Lep. Ceyl. iii. p. 28, pl. 147. f. 2 *a*.

Smooth, the anal somite conical; pale green; dorsal and lateral series of purple-brown blotches irrorated with white; sublateral series of white points. Food-plants: *Acanthads*. *Pupa* greenish with red somital bands.

3140. Perigea lineata.

Tæniocampa lineata, Druce, Biol. Centr.-Am., Het. i. p. 288, pl. 27. f. 16 (1889).

♂. Head, tegulæ, and patagia bright rufous, vertex of thorax grey; pectus pale rufous; tarsi brown with pale rings; abdomen grey. Fore wing bright rufous suffused with fiery red and slightly irrorated with grey; subbasal line defined by grey on outer side, waved, from costa to submedian fold; antemedial line double filled in with grey, oblique, incurved in cell; orbicular and reniform with grey annuli defined by brown, the former elliptical, the latter constricted at middle; faint traces of a medial line; postmedial line brown defined by grey on outer side and with series of grey and brown points beyond it on the veins, almost straight from costa to vein 4 then slightly incurved, some minute greyish points beyond it on costa; subterminal line greyish defined on inner side by fuscous suffusion, angled outwards at vein 7 and excurved at middle; a fine grey line just before termen; cilia fuscous and grey with fine grey line at base. Hind wing yellowish white, the terminal area suffused with red-brown from costa to vein 2; the underside with the costal area irrorated with rufous, a brown postmedial line from costa to vein 5, a fine dark terminal line, cilia with a yellow line at base.

♀. Hind wing wholly suffused with brown.

Hab. Costa Rica, Caché (*Rogers*), 1 ♀; Panama, Chiriqui (*Champion*), 6 ♂, 2 ♀ type, Godman-Salvin Coll., La Chorrera (*Dolby-Tyler*), 1 ♂. *Exp.* 30–36 millim.

*3141. Perigea cenola. (Plate CXVI. fig. 21.)

Perigea cenola, Schaus, Pr. U. S. Nat. Mus. xxx. p. 100 (1906).

♂. Head and thorax red-brown suffused with fuscous; pectus and legs paler; abdomen whitish suffused with brown, the dorsal crests darker. Fore wing red-brown suffused with fuscous from near base to postmedial line except on costal area, the veins with dark streaks; subbasal line represented by slight double striæ from costa; a minute black streak above vein 1 near base; antemedial line indistinct, double, oblique, waved, angled inwards above vein 1; traces of a narrow claviform defined by black above and at extremity; orbicular and reniform indistinctly defined by black, the former rather oblique elliptical, the latter with irregular outline and some blackish in centre; postmedial line indistinct, strongly bent outwards below costa, then with double series of slight black points beyond it on the veins, slightly incurved at discal fold, incurved below vein 4; an indistinct diffused dark subterminal line, excurved below vein 7 and at middle; a terminal series of black points. Hind wing ochreous white, the termen tinged with brown from apex to vein 2; a fine dark terminal line; the underside with the costal area and terminal area to vein 2 irrorated with red-brown.

Hab. Brazil, São Paulo, in Coll. D. Jones. *Exp.* 32 millim.

3142. Perigea tetera. (Plate CXVI. fig. 22.)

Celæna tetera, Wlk. xv. 1690 (1858).
Gaphara sobria, Wlk. Trans. Ent. Soc. (3) i. p. 96 (1862).

♂. Head, thorax, and abdomen grey-brown. Fore wing brown suffused with grey, the postmedial area whitish; a slight waved subbasal line from costa to submedian fold; antemedial line slightly defined by greyish on inner side, oblique, waved; orbicular and reniform small, defined by brown and their centres tinged with yellowish, the former round; a diffused dark medial shade, excurved from costa to lower angle of cell, then incurved; postmedial line brown defined by whitish on outer side, bent outwards below costa, then with brown streaks ending in white points beyond it on the veins, slightly incurved at discal fold; incurved below vein 4, some white points beyond it on costa; subterminal line formed of slight pale marks defined by brown suffusion on inner side, angled outwards at veins 7, 6, 4, 3, and incurved at discal and submedian folds; a series of minute whitish points just before termen; cilia with a fine whitish line at base. Hind wing white, the terminal area suffused with brown from costa to vein 2; the underside with the costal area slightly irrorated with brown.

♀. Fore wing more uniformly grey-brown, the reniform whitish in type, rufous in type *sobria*; hind wing wholly tinged with brown; the underside with slight discoidal lunule, sinuous postmedial line, and diffused terminal band.

Hab. Brazil, Organ Mts., Tijuca (*Wagner*), 1 ♂, 1 ♀. *Exp.* ♂ 28, ♀ 32 millim. Type † and type † *sobria* in Mus. Oxon.

3143. **Perigea griseata.** (Plate CXVI. fig. 23.)

Bryophila griseata, Leech, Trans. Ent. Soc. 1900, p. 139.

♀. Head and thorax fuscous mixed with grey-white; tarsi with pale rings; abdomen grey-brown. Fore wing fuscous brown irrorated with white especially on basal, costal, and terminal areas; subbasal line defined by white on outer side, from costa to submedian fold, with small white spot beyond it in cell; antemedial line indistinct, double filled in with white, waved, somewhat oblique; orbicular with incomplete white annulus, round; reniform with small white lunule in centre and white annulus constricted at middle; postmedial line with white spot at costa, bent outwards below costa, then dentate, defined by white on outer side and produced to small white spots on the veins, excurved to vein 4, then incurved, some small white spots beyond it on costa; subterminal line formed of diffused white scales, excurved below vein 7 and at middle, angled inwards at discal and submedian folds; a terminal series of small black lunules slightly defined by white on inner side; cilia brown at base with dark medial line and whitish tips. Hind wing fuscous brown, the cilia ochreous at base with dark medial line and whitish tips; the underside whitish tinged and irrorated with brown, a dark discoidal lunule, diffused curved postmedial line, and diffused subterminal band.

Hab. C. China, Kiukiang (*Pryer*), 1 ♂, 1 ♀, Ichang (*Pratt*), 1 ♀; W. China, Chang-yang (*Pratt*), 1 ♂ type. *Exp.* 40 millim.

3144. **Perigea fuliginosa.** (Plate CXVI. fig. 24.)

Caradrina fuliginosa, Leech, Trans. Ent. Soc. 1900, p. 120.

♀. Head and thorax brown mixed with grey; tarsi with pale rings; abdomen grey suffused with brown. Fore wing fuscous brown irrorated with grey; subbasal line represented by slight double striæ from costa and cell; antemedial line very indistinct, double filled in with grey, oblique from costa to submedian fold and angled inwards on vein 1; claviform absent; orbicular small, round, with faint greyish annulus slightly defined by blackish; reniform faintly defined by blackish with some white scales in centre and white points on annulus, constricted at middle; traces of a diffused dark medial line oblique from costa to below cell; postmedial line very indistinct, slightly defined by grey on outer side, bent outwards below costa, then dentate and produced to grey points on the veins, excurved to vein 4, then oblique, some whitish points beyond it on costa; subterminal line represented by a series of minute greyish streaks on the veins; the interspaces of terminal area with slight dark streaks; a fine pale line at base of cilia.

Hind wing greyish suffused with fuscous brown; the cilia with a fine pale line at base; the underside grey thickly irrorated with brown, a small discoidal spot and somewhat diffused postmedial line.

Hab. Japan, Nagasaki (*Leech*), 1 ♀ type. *Exp.* 36 millim.

3145. Perigea vacillans.

Hadena vacillans, Wlk. xv. 1725 (1858).
Perigea fidelia, Druce, Biol. Centr.-Am., Het. i. p. 278, pl. xxvii. f. 4 (1889).

Head and thorax bright purplish red mixed with some ochreous and fuscous; palpi with some black at sides; frons with lateral black bars; tegulæ with black annuli; tarsi black ringed with white; abdomen ochreous and rufous with diffused fuscous dorsal bands, the crests black at tips, the ventral surface ochreous. Fore wing bright purplish red irrorated with black; subbasal line represented by slight double black striæ from costa and a diffused black mark below cell; antemedial line indistinctly double, angled outwards below costa, then waved and somewhat oblique; claviform represented by a black mark; orbicular incompletely defined by black and with black point in centre; reniform very incompletely defined by black, with small white spot in lower part and some whitish points on edges; an indistinct rather diffused medial line oblique from costa to lower angle of cell, then inwardly oblique; postmedial line double, strongly bent outwards below costa, then minutely dentate and produced to black and whitish points, some small black lunules on its inner side, incurved below vein 4, some whitish points beyond it on costa; subterminal line represented by a series of small dentate black marks, bent outwards between veins 7, 6, and incurved at discal and submedian folds; the veins of terminal area streaked with black; a terminal series of slight black lunules with whitish points between them on the veins; cilia purplish red mixed with black. Hind wing fuscous brown with a reddish gloss; a waved dark terminal line; cilia pale purplish red; the underside whitish, the costal and terminal areas except towards tornus suffused and irrorated with red, a black discoidal lunule and minutely waved postmedial line from costa to vein 2.

Hab. Panama, Chiriqui (*Champion*), 4 ♂ type *fidelia*, Godman-Salvin Coll., La Chorrera (*Dolby-Tyler*), 1 ♀; Venezuela, Aroa, 1 ♀; Peru, 1 ♀; Brazil, Organ Mts., Tijuca (*Wagner*), 1 ♂. *Exp.* 30–34 millim. Type † in Mus. Oxon.

3146. Perigea selenosa. (Plate CXVI. fig. 25.)

Perigea selenosa, Guen. Noct. i. p. 228 (1852).
Perigea vecors, Guen. Noct. i. p. 230 (1852); Smith, Cat. Noct. N. Am. p. 152.
Apamea remissa, Wlk. xi. 729 (1857).
Mamestra demittens, Wlk. xv. 1684 (1858).

Dryobota agnata, Feld. Reis. Nov. pl. 109. f. 4 (1874).
Perigea luxa, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 200 (1875).
Mamestra samula, Druce, Biol. Centr.-Am., Het. ii. p. 476, pl. 93. f. 16 (1898).
Perigea sutor, Druce, Biol. Centr.-Am., Het. i. p. 278, & ii. p. 480 (nec Guen.).
Perigea fidelia, Druce, Biol. Centr.-Am., Het. i. p. 278 (part.).

(*vecors*). Head and thorax ochreous mixed with dark brown; palpi black at sides; frons with lateral black bars; tegulæ with black annuli; tarsi black with pale rings; abdomen ochreous brown suffused with fuscous except at base and on ventral surface, the crests black. Fore wing brownish ochreous almost wholly suffused with fuscous; subbasal line defined by ochreous on outer side, from costa to submedian fold and with black and ochreous point beyond it in cell; antemedial line indistinct, double filled in with ochreous, minutely waved and somewhat oblique; claviform a blackish mark; orbicular ochreous slightly defined by black and with dark centre, somewhat oblique elliptical; reniform whitish tinged with brown above, its centre defined by black, somewhat dentate at lower extremity, constricted at middle and expanding below; a dark medial shade; postmedial line double filled in with ochreous, strongly bent outwards below costa, then dentate and produced to black and white points on the veins, slightly incurved at discal fold, incurved below vein 4, some ochreous points beyond it on costa; subterminal line diffused, ochreous defined on inner side by fuscous suffusion, angled outwards at vein 7 and inwards at discal and submedian folds, at the former expanding into an ochreous patch; a fine waved black terminal line; cilia with fine ochreous line at base followed by a dark line. Hind wing fuscous, brownish at base; a waved black terminal line; cilia white; the underside whitish irrorated with brown, a dark discoidal lunule, crenulate postmedial line, diffused subterminal band, and waved black terminal line.

Ab. 1. *selenosa*. Fore wing with the lower part of reniform filled in by a large white spot.

Hab. U.S.A., Massachusetts, New York, Trenton Falls (*Doubleday*), 1 ♂, 2 ♀ types *vecors* and *remissa* (*Meske*), 1 ♂, 1 ♀ type *luxa*, Distr. of Columbia, Florida, Texas, Colorado; Mexico, Jalapa (*Trujillo*), 1 ♂, 2 ♀ type *samula*, Tabasco (*H. H. Smith*), 1 ♀; Costa Rica, Candelaria Mts. (*Underwood*), 1 ♀; Guatemala (*Rodriguez*), 2 ♂, 1 ♀; Panama, Chiriqui (*Champion*), 3 ♀, Godman-Salvin Coll.; Jamaica (*Bowrey*), 1 ♂, Gordon Town (*Kaye*), 1 ♂, 1 ♀; Venezuela (*Dyson*), 1 ♂ type *demittens*; Brazil, São Paulo (*D. Jones*), 3 ♂, 1 ♀, Rio Janeiro, 1 ♂. *Exp.* 36–44 millim. Type † *agnata* in Coll. Rothschild.

3147. Perigea berinda.

Perigea berinda, Druce, Biol. Centr.-Am., Het. i. p. 278, pl. 27. f. 5 (1889).
Xylina detrecta, Druce, Biol. Centr.-Am., Het. i. p. 297 (part., nec Wlk.).

Head and tegulæ red-brown mixed with black, the thorax suffused with black; palpi with some black at sides; frons with black bar; tegulæ with curved black medial line; tarsi black with pale rings; abdomen reddish brown, the crests blackish, the ventral surface yellowish. Fore wing yellow-brown suffused in parts with fuscous especially on antemedial costal area, along terminal part of median nervure and before subterminal line; two black points at base followed by the indistinct double waved subbasal line from costa to vein 1; antemedial line indistinct, double, minutely waved, oblique; claviform a black spot; orbicular and reniform defined by black and their centres by black, the former irregularly rounded, the latter constricted at middle; an indistinct waved medial line oblique from costa to median nervure; postmedial line indistinct, double, bent outwards below costa, then minutely waved and with black points beyond it on the veins, oblique below vein 4, some pale points beyond it on costa; subterminal line yellowish strongly defined on inner side by black suffusion except at middle, angled outwards at veins 7, 6, 4, 3, and incurved at discal and submedian folds; the veins of terminal area streaked with black, a terminal series of small black lunules; cilia reddish and black with black line through them. Hind wing reddish brown, paler at base; cilia white; the underside yellowish white, the costal area irrorated with brown, a brown discoidal point, curved punctiform postmedial line from costa to vein 3, and diffused subterminal band.

Hab. Mexico, Jalapa (*Trujillo*), 1 ♂, 5 ♀, type, Durango (*Forrer*), 1 ♀, Tabasco (*H. H. Smith*), 1 ♀; Guatemala, Cerro Zunil (*Champion*), 1 ♂, San Isidro (*Champion*), 1 ♂; Panama, Chiriqui (*Champion*, *Ribbé*), 2 ♂, 2 ♀, Bugaba (*Champion*), 1 ♀, Godman-Salvin Coll.; Paraguay, Sapucay (*Foster*), 1 ♀. *Exp.* 32–36 millim.

*3148. Perigea mustia. (Plate CXVI. fig. 26.)

Perigea mustia, Dogn. Ann. Soc. Ent. Belg. xli. p. 411 (1897).

♂. Head and thorax ferruginous red; palpi black at sides except at extremity of 2nd joint; tegulæ with black medial line; patagia fuscous at extremities; tarsi black with pale rings; abdomen ochreous dorsally suffused with fuscous, the dorsal crests and anal tuft ferruginous. Fore wing ferruginous red irrorated and in places suffused with black; the subbasal and antemedial lines very indistinct, waved; the orbicular large, round, slightly defined by black; reniform indistinct with white points on its inner and outer edges above, a prominent white spot on its lower part with two white points beyond it; the postmedial line double, waved and produced to black and white points on the veins, bent outwards below costa and incurved below vein 4, the area between it and subterminal line suffused with fuscous black except at costa, its outer edge excurved at vein 7 and middle and angled inwards

at discal and submedian folds; the veins streaked with black towards termen; a fine waved black terminal line; cilia fuscous intersected with rufous. Hind wing pale suffused with fuscous brown especially on terminal area; cilia whitish; the underside whitish, the costal area suffused with rufous and irrorated with brown, a small black discoidal spot and diffused fuscous subterminal band except towards tornus.

Hab. Ecuador, Loja, type † ♂ in Coll. Dognin. *Exp.* 30 millim.

3149. **Perigea agalla.** (Plate CXVI. fig. 27.)

Celerena agalla, Dogn. Ann. Soc. Ent. Belg. xli. p. 411 (1897).

Head and thorax greyish mixed with red-brown; abdomen rufous with sublateral series of black spots. Fore wing greyish suffused in places with pale rufous; traces of a double waved subbasal line from costa to submedian fold with a small black spot on its outer edge just below cell; an oblique double waved antemedial line, angled outwards below costa and above inner margin and incurved at vein 1; orbicular small, oblique, pear-shaped, whitish with its centre defined by brown; reniform bar-shaped, whitish with black linear centre; the cell just before orbicular and between the stigmata blackish continued as a fascia in discal fold, expanding towards termen to just below apex; a somewhat dentate medial line oblique from costa to cell, then slightly inwardly oblique; postmedial line minutely waved, interrupted at the veins with two black strigæ at costa, excurved to vein 4, then incurved and with two series of black points on the veins beyond it; subterminal line pale defined by brownish suffusion on inner side, minutely waved and slightly excurved below costa and at middle; black streaks on the dark fascia above veins 5 and 6, the lower extending to reniform; a terminal series of small black lunules defined by whitish; cilia intersected with black towards apex. Hind wing pale suffused with fuscous; the cilia white; the underside whitish, the costal half and terminal area irrorated with brown, a dark discoidal point, minutely waved curved postmedial line, and diffused subterminal band.

Hab. Ecuador, Loja, type † ♀ in Coll. Dognin; S.E. Peru, Agualani (*Ockenden*), 1 ♂. *Exp.* 36 millim.

3150. **Perigea bahamica**, n. sp. (Plate CXVI. fig. 28.)

Euplexia agnonia, Hmpsn. A. M. N. H. (7) xiv. p. 168, nec Druce.

Head and thorax whitish slightly tinged with brown; palpi with some black at sides of 2nd joint; frons with lateral black bars; tegulæ with black medial line; patagia with some black on outer edge; tarsi black ringed with whitish; abdomen brownish white irrorated with fuscous. Fore wing white tinged with ochreous brown, the costal area white; a black streak below base of cell; subbasal line represented by double oblique striæ from costa, the

antemedial line by double oblique striæ from costa and an indistinct line from cell to inner margin, angled outwards in submedian fold and above inner margin and inwards on vein 1; claviform represented by a black streak just above submedian fold; the cell black before and between the stigmata, the orbicular small, rather elongate, ochreous defined by black and with an ochreous streak in discal fold from it to reniform, which is white defined by black on inner side and below, its centre defined by black and somewhat S-shaped, black streaks beyond it above and below vein 5 to beyond the postmedial line, which is indistinctly double, bent outwards below costa, then with series of black and white points on its outer edge, excurved to vein 4, then oblique, a black streak beyond it above vein 6; subterminal line indistinct, defined on inner side by some fuscous suffusion, angled outwards at veins 7, 6, 4, 3, 2, and inwards at discal and submedian folds; a terminal series of small black lunules; cilia brownish white mixed with black. Hind wing white with fuscous suffusion on costal area, on the veins beyond the cell and on terminal area narrowing to tornus; cilia white slightly mixed with brown; the underside white, the costal area and terminal area to vein 2 irrorated with fuscous, a small black discoidal spot, indistinct postmedial line from costa to vein 2, and terminal series of small lunules.

Hab. Bahamas, Abaco (*Mears*), 1 ♂, Andros (*Bonhote*), 1 ♂, 5 ♀, type. *Exp.* 28–34 millim.

3151. Perigea punctifera. (Plate CXVI. fig. 29.)

Celæna punctifera, Wlk. x. 263 (1856); Smith, Cat. Noct. N. Am. p. 153.
Celæna semifurca, Wlk. xi. 732 (1856).

Head and thorax reddish brown mixed with grey and black; palpi black above; frons with lateral black bars; tegulæ with curved black medial line; tarsi black with pale rings; abdomen ochreous dorsally suffused with black except at base, the crests black at tips. Fore wing reddish brown slightly suffused with fuscous; two black points at base followed by double black striæ from costa and an oblique striga below cell; antemedial line double, the inner line indistinct except at costa, oblique, waved, angled inwards to white points on the veins; claviform a small black spot; orbicular a slight white annulus incompletely defined by black, oblique elliptical; reniform with slight yellowish annulus incompletely defined by black, its lower part filled in by a white spot, defined by black; an indistinct diffused medial line oblique to median nervure, then inwardly oblique; postmedial line double at costa, strongly bent outwards below costa, then minutely dentate and produced to black and white points on the veins, excurved to vein 4, then oblique, some white points beyond it on costa; subterminal line whitish defined on inner side by black suffusion except at middle, angled outwards at veins 7, 6, 4, 3, and inwards at discal and submedian folds; a terminal series of black points

defined on inner side by slight yellowish lunules; cilia fuscous with fine yellowish line at base. Hind wing whitish suffused with brown, the terminal area with fuscous; cilia whitish tinged with brown at base; the underside white irrorated with fuscous, a small discoidal spot, minutely waved postmedial line from costa to vein 1, diffused subterminal shade and terminal series of black points.

Ab. 1. Fore wing with the white spot in reniform obsclescent.

Hab. Bahamas, Andros (*Neville Chamberlain*, *Bonhote*), 4 ♂; Jamaica (*Gossé*), 2 ♂ type, Constant Springs (*Walsingham*), 1 ♂, Moneague (*Walsingham*), 1 ♀; Cuba, Santiago (*Schaus*), 1 ♂, 2 ♀; Haiti (*Tweedie*), 1 ♀ type *semifurca*. *Exp.* 26–32 millim.

The locality U.S.A. is a mistake.

3152. Perigea secorva. (Plate CXVI. fig. 30.)

Perigea secorva, Schaus, Pr. U.S. Nat. Mus. xxx. p. 100 (1906).

♂. Head and thorax ochreous tinged with red-brown and mixed with black; palpi with blackish mark at side of 2nd joint; frons with black bar above; tegulæ with black annuli; prothoracic crest with black line; tarsi black ringed with ochreous; abdomen pale ochreous with diffused dorsal blackish bands. Fore wing pale olive-ochreous, irrorated and in parts suffused with fuscous, especially in cell before and between the stigmata and on terminal area, a reddish tinge on medial area below submedian fold, the interspaces beyond the cell with prominent black streaks; a black streak below basal half of cell with a slight whitish streak below it at base; subbasal line represented by double oblique striæ from costa filled in with whitish and a pale elliptical mark in cell; antemedial line double at costa, then indistinct, slightly waved, angled inwards on vein 1 and strongly outwards above inner margin where it forms fine double streaks; claviform a narrow black mark; orbicular and reniform pale defined by black, their centres also defined by black, in latter forming two triangular marks, the former round; postmedial line double towards costa, strongly bent outwards below costa, then indistinct, minutely dentate and with double series of black points beyond it on the veins, excurved to vein 4, then oblique and angled inwards in submedian fold, some black points beyond it on costa; subterminal line hardly traceable, pale, angled inwards at discal and submedian folds; a terminal series of small black lunules; cilia fuscous intersected with ochreous. Hind wing fuscous brown; cilia brown at base, whitish at tips; the underside yellowish white, the costal area and terminal area to vein 2 tinged with red and irrorated with black, a small black discoidal point, postmedial series of points on the veins, and terminal series of small lunules.

Hab. Brazil, Castro Paraña, in Coll. D. Jones; Paraguay, Sapucay (*Foster*), 1 ♂. *Exp.* 36 millim.

*3153. Perigea rubrifusa. (Plate CXVI. fig. 31.)

Perigea rubrifusa, Druce, A. M. N. H. (8) i. p. 297 (1908).

♀. Head and thorax deep red; vertex of head with two blackish points; tegulæ with black medial line; patagia with some black scales on upper edge; tarsi ringed with white; abdomen whitish suffused with red. Fore wing deep red mixed with whitish; subbasal line represented by double oblique blackish striæ from costa and a blackish wedge-shaped mark below the cell; antemedial line blackish defined on inner side by whitish, dentate; orbicular with white annulus except on inner side, rather elliptical; reniform with white annulus slightly defined by black, its centre slightly defined by black, rather narrow; a diffused oblique blackish bar from middle of costa; postmedial line blackish, double and filled in with whitish towards costa, bent outwards below costa, then minutely dentate with black and whitish points beyond it on the veins, angled inwards in discal fold and incurved below vein 4, some whitish points beyond it on costa; subterminal line whitish defined on inner side by blackish suffusion, excurved below vein 7 and at middle and angled inwards at discal fold; a terminal series of small black lunules slightly defined by whitish on inner side; a fine white line at base of cilia. Hind wing whitish suffused with brown, the termen with red; a brown terminal line; cilia white tinged with red at base; the underside white, the costal and terminal areas suffused and irrorated with red, a black discoidal spot, curved minutely waved postmedial line, and terminal series of lunules.

Hab. S.E. Peru, S. Domingo (*Ockenden*), type † ♀ in Coll. Druce. *Exp.* 34 millim.

3154. Perigea agnonia.

Perigea agnonia, Druce, P. Z. S. 1890, p. 513; id. Biol. Centr.-Am.., Het. ii. p. 480, pl. 93. f. 27.

Head and thorax ochreous mixed with black-brown; palpi with the 2nd joint black at sides; frons with lateral black bars; tarsi black ringed with rufous; abdomen brown, the ventral surface ochreous irrorated with brown. Fore wing ochreous suffused with brown and irrorated with fuscous, the costal area somewhat paler; a slight black streak below base of cell; subbasal line represented by double oblique striæ from costa, the antemedial line by double striæ from costa and slight double striæ in and below cell; claviform a slight blackish mark; orbicular defined by brown, round; reniform very incompletely defined by brown and with some blackish points round centre, constricted at middle; postmedial line double and black towards costa, strongly bent outwards below costa, then minutely waved with double series of black points beyond it on the veins,

incurved below vein 4, some black points beyond it on costa; the veins and interspaces of terminal area with slight dark streaks; subterminal line indistinctly defined by brown suffusion on inner side, excurved below vein 7 and at middle and incurved at discal fold; a terminal series of black points forming slight lunules towards tornus; cilia reddish brown with slight pale line at base. Hind wing whitish suffused with reddish brown, the inner area rather paler; cilia yellowish white; the underside whitish, the costal area irrorated with brown, a blackish discoidal spot, postmedial series of points on the veins, and terminal series of small lunules from costa to vein 2.

Hab. Mexico, Orizaba, 1 ♀, Jalapa (*Trujillo*), 2 ♂, 1 ♀; Guatemala, Volcan de Atitlan (*Champion*), 1 ♀; Panama, Chiriqui (*Champion*), 3 ♂, 1 ♀ type, Godman-Salvin Coll. *Exp.* 28–32 millim.

3155. Perigea parastichtoides, n. sp. (Plate CXVI. fig. 32.)

♂. Head and thorax whitish mixed with rufous; metathorax with black patch; pectus and legs whitish; abdomen whitish dorsally slightly tinged with brown, the crests blackish at tips. Fore wing ochreous white irrorated with rufous, the costal area whiter, the cell between the stigmata and area beyond the reniform redder; a black point at base; subbasal line represented by slight double striæ from costa; antemedial line with double striæ from costa, then almost obsolete, dentate and with black points at the veins; orbicular a very ill-defined round whitish mark; reniform whitish, constricted at middle and with its upper and lower extremities produced, two black points on inner side of centre; postmedial line dark and double at costa, bent outwards below costa, then very indistinct, reddish with double series of black points beyond it on the veins, incurved below vein 4, some black points beyond it on costa; subterminal line defined by rufous suffusion on inner side, excurved below vein 7 and at middle, incurved at discal and submedian folds; a terminal series of black points. Hind wing whitish suffused with brown, the terminal area tinged with reddish; cilia white; the underside flesh-white, the costal area slightly irrorated with brown, a slight dark-defined discoidal lunule, reddish postmedial line from costa to vein 2 with black points on the veins, and terminal series of points.

Hab. Brazil, São Paulo (*D. Jones*), 4 ♂ type. *Exp.* 30 millim.

3156. Perigea leucanioides, n. sp. (Plate CXVII. fig. 1.)

♂. Head and thorax ochreous tinged with rufous; abdomen ochreous white. Fore wing pale yellow with red streaks on the veins and in interspaces, the veins towards termen streaked with white and defined by red, the apical half of costal area white; subbasal and antemedial lines represented by double oblique red striæ from costa; stigmata absent; a blackish spot in lower angle of cell;

postmedial line double and brown towards costa, bent outwards below costa, then represented by a somewhat oblique series of dark points on the veins with white points beyond them, some blackish striæ on apical part of costa; subterminal line absent; a terminal series of minute black points. Hind wing ochreous suffused with brown, the terminal area cupreous red from costa to submedian fold; cilia reddish at base, yellowish at tips; the underside ochreous white slightly irrorated with red, a small blackish discoidal spot, curved red postmedial line from costa to submedian fold, and terminal series of small black lunules from apex to vein 2.

Hab. Venezuela, 1 ♂. *Exp.* 36 millim.

3157. Perigea xylophasioides. (Plate CXVII. fig. 2.)

Perigea xylophasioides, Guen. Noct. i. p. 226 (1852).

♂. Head and thorax ochreous tinged with rufous; palpi with some fuscous at sides; frons with dark bars at middle and above; tegulæ with slight rufous medial line and dark line near tips; upper edge of patagia and prothoracic crest at tip with some blackish scales; metathorax with blackish patch; abdomen ochreous dorsally tinged with brown, the crests blackish at tips. Fore wing ochreous tinged with rufous, especially on medial area, on postmedial area between veins 7 and 4 and on terminal area except at apex, the median nervure and vein 1 on basal half with slight white streaks and the veins of terminal area with dark streaks, some reddish streaks in base of submedian interspace; some dark points below basal half of costa, a red-brown streak on inner margin except at base; antemedial line represented by double dark points on the veins except below submedian fold where it is very strongly dentate inwards on vein 1 and to inner margin; orbicular with slight yellowish annulus, very oblique elliptical; reniform yellowish with some black points in centre and slight whitish annulus below; traces of a reddish minutely dentate oblique line from lower angle of cell to inner margin; postmedial line represented by a double series of dark points on the veins, strongly bent outwards below costa and oblique below vein 4; a diffused dark streak on vein 4 from lower angle of cell to termen; subterminal line brown, diffused, slightly excurved below vein 7 and at middle and with white points beyond it on the veins; a terminal series of black points; cilia chequered brown and yellowish. Hind wing ochreous whitish suffused with brown especially on the veins and terminal area; a terminal series of dark points; cilia brownish white; the underside whitish, the costal area irrorated with brown, a slight blackish discoidal spot, postmedial series of points on the veins and terminal series.

Hab. Brazil, Neu Friburg, Rio Janeiro, 1 ♂. *Exp.* 36 millim.

3158. Perigea xanthioides. (Plate CXVII. fig. 3.)

Perigea xanthioides, Guen. Noct. i. p. 227 (1852); Smith, Cat. Noct. N. Am. p. 152.
Perigea enixa, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 210 (1875).
Hadena trita, Möschl. Abh. Senck. Nat. Ges. xiv. p. 50 (1888).

Head and thorax yellow mixed with red; palpi blackish at sides; frons with black lateral bars; tegulæ with slight brown lines at middle and tips; prothoracic crests with some fuscous at tips; metathorax with blackish patch; fore tibiæ and tarsi dark brown, the latter banded with reddish; abdomen pale yellow suffused with brown except at base, the dorsal crests dark. Fore wing orange-yellow suffused with red, especially on medial and terminal areas, the veins with fuscous streaks; subbasal line red, waved, from costa to submedian fold, a brownish patch on costa beyond it and a point in submedian fold; a dark point on inner margin before the dark waved antemedial line which is angled inwards to black points on the veins; orbicular yellow defined by brown and with reddish point in centre, rather small, round; reniform yellow defined by diffused brown and with black point in lower part, irregularly rounded; an indistinct waved medial line; postmedial line brown, double at costa, bent outwards below costa, then with double series of prominent black points beyond it on the veins, obliquely incurved below vein 4, some yellow points with brown striæ between them beyond it on costa; subterminal line diffused, brown with yellow marks beyond it from costa and below veins 6 and 2, bent outwards between veins 7 and 6 and slightly excurved at middle; a terminal series of black points; cilia dark brown. Hind wing yellowish suffused with brown, a terminal series of slight dark points and faint yellowish line at base of cilia; the underside whitish, the costal half yellowish irrorated with brown, a slight discoidal spot and terminal series of points.

Ab. 1. *enixa*. Head, thorax, and fore wing very much paler (? faded), whitish tinged with rufous and fuscous; hind wing white, the terminal area tinged with pale brown.

Hab. Canada; U.S.A., E. States to Florida, N. York (*Packard*), 3 ♀, Pennsylvania, New Brighton (*Merrick*), 1 ♂, Florida (*Doubleday*), 2 ♀ type, Kansas, 2 ♂, Texas, Dallas (*Boll*), 2 ♂, 4 ♀ type *enixa*; Jamaica; Cuba, Baracoa (*Schaus*), 1 ♀; Trinidad, Cuparo (*Kaye*), 1 ♀; Brazil, Organ Mts., Tijuca (*Wagner*), 2 ♀. *Exp.* 28–36 millim.

*3159. Perigea abstemia. (Plate CXVII. fig. 4.)

Perigea abstemia, Guen. Noct. i. p. 231 (1852).

♂. Head and thorax yellow tinged with rufous and mixed with some black; palpi black at sides except at extremity of 2nd joint; frons with lateral black bars; tegulæ with blackish line near tips; tarsi blackish ringed with white; abdomen ochreous suffused with brown, pale at base, the crests blackish. Fore wing yellow tinged

with rufous; subbasal line represented by double black striæ from costa and a spot below the cell; antemedial line double, rather interrupted, curved and irregularly waved; claviform slightly defined by diffused black; orbicular and reniform yellow defined by blackish and with their centres slightly defined by brown, the former round, the latter somewhat constricted at middle and with small black spot in lower part near inner edge, some dark brown suffusion between and beyond them; postmedial line blackish, strongly bent outwards below costa, then minutely waved and with double series of black points beyond it on the veins; subterminal line yellowish defined on inner side by brown suffusion, excurved below vein 7 and at middle; a terminal series of black points; cilia dark brown. Hind wing ochreous suffused with red-brown; a fine waved black terminal line with black points in the interspaces; the underside ochreous white tinged with rufous and irrorated with brown, a blackish discoidal spot and diffused crenulate postmedial line with black points on the veins.

Hab. Mexico, type † ♂ in Mus. Paris. *Exp.* 42 millim.

3160. Perigea perparvula. (Plate CXVII. fig. 5.)

Perigea perparvula, Schaus, Trans. Am. Ent. Soc. xxi. p. 229 (1894).

♂. Head and thorax yellow tinged with rufous and mixed with dark brown; palpi with the 2nd joint black except at extremity; metathorax with black patch; pectus and legs white, the latter irrorated with brown; abdomen white dorsally tinged with brown, the crests blackish. Fore wing golden yellow irrorated with rufous; the medial area before and between the stigmata and the terminal area tinged with brown; subbasal line double, waved, from costa to submedian fold; antemedial line indistinctly double, waved, with black points at the veins, angled inwards on vein 1; claviform small, defined by brown; orbicular and reniform yellow irrorated with rufous and defined by black, the former round; an indistinct, rather diffused medial line; postmedial line indistinct, double at costa, bent outwards below costa, then minutely dentate and with double series of black points on the veins, incurved below vein 4, a series of black striæ beyond it on costa; subterminal line brown, rather diffused, excurved below vein 7 and at middle; a terminal series of small black lunules; cilia yellow and brown with blackish line through them. Hind wing pure white; the underside with the costal area slightly irrorated with brown, some small black lunules on apical half of costa.

♀. Hind wing tinged with brown especially on terminal area.

Hab. Brazil, Castro Paraña (*D. Jones*), 1 ♂; Paraguay, Sapucay (*Foster*), 3 ♀. *Exp.* 24 millim.

3161. Perigea ethiopica, n. sp. (Plate CXVII. fig. 6.)

♀. Head and thorax ochreous irrorated with some black scales; palpi blackish at sides; tegulæ edged with black; tarsi black with

pale rings; abdomen ochreous suffused with fuscous brown except at base, the basal crest tipped with black, the ventral surface whitish irrorated with brown. Fore wing yellowish tinged with green and slightly irrorated with fuscous, the costa suffused with fuscous except at base, an oblique white fascia from apex defined by a black streak below, the terminal area red-brown from lower angle of cell to tornus and the apical fascia; traces of an oblique waved antemedial line; claviform small, defined by black except below; orbicular and reniform whitish defined by a few black scales and their centres slightly by brown, the former round, the latter narrow; postmedial line hardly traceable, double, strongly bent outwards below costa, then minutely dentate, some white points beyond it on costa; a diffused blackish subterminal line from the apical fascia to inner margin; a terminal series of black points; cilia pale rufous mixed with blackish. Hind wing fuscous brown, the cilia whitish; the underside greyish uniformly suffused and irrorated with fuscous brown.

Hab. Uganda, Entebbe (*Minchin*), 1 ♀ type. *Exp.* 32 millim.

3162. Perigea spicea.

Perigea spicea, Guen. Noct. i. p. 226 (1852); Hmpsn. Moths Ind. ii. p. 319.
Bagada pyrochroma, Wlk. xv. 1753 (1858); Hmpsn. Ill. Het. B. M. ix. p. 97, pl. 162. f. 2.
Acontia firina, Swinh. P. Z. S. 1885, p. 455, pl. 27. f. 5.

Head, thorax, and abdomen ochreous tinged with rufous; palpi blackish at sides. Fore wing ochreous tinged with rufous especially from lower angle of cell to tornus and termen below an oblique dark subapical streak, the costal area paler, the costa and inner margin brownish except towards base, the medial part of inner margin suffused with white, the tornus with black; subbasal line represented by brown points on costa and in cell; antemedial line very indistinct, curved with brown mark before it on costa and another

Fig. 55.—*Perigea spicea*, ♂. ½.

beyond it; orbicular and reniform with faint pale annuli, the former round, the latter with its centre defined by black points, constricted at middle; a black spot beyond lower angle of cell; postmedial line very indistinctly double towards costa, strongly bent outwards below costa, then oblique and with series of black and white points on its outer edge, some brown striæ beyond it on

costa; traces of a diffused dark subterminal line from the subapical streak to inner margin; a terminal series of black points; cilia ochreous intersected with brown, wholly brown towards tornus. Hind wing ochreous white faintly tinged with brown, the terminal area suffused with brown from apex to submedian fold, in female wholly suffused with brown; the underside with the costal area tinged with rufous, a dark discoidal point, postmedial series of points on the veins, and terminal series of minute black lunules.

Ab. 1. *pyrochroma*. Head, thorax, and fore wing much redder.

Ab. 2. Fore wing suffused with very dark red-brown instead of rufous.

Hab. C. China, Ship-y-shán (*Pratt*), 1 ♂, 1 ♀; Punjab, Simla (*Harford*), 1 ♂; Bombay (*Leith*, *Swinhoe*), 2 ♂ type *firma*; Madras, Nilgiris (*Hampson*), 3 ♀, Travancore, Pirmád (*Mrs. Imray*), 3 ♂, 1 ♀; Ceylon, Kandy (*Templeton*, *Green*), 1 ♂, 3 ♀ type *pyrochroma*; Java (*Horsfield*), 1 ♂ type, Arjuno (*Doherty*), 1 ♀. *Exp.* 24–30 millim.

Larva. Hmpsn. Ill. Het. B. M. ix. p. 97, pl. 176. f. 20.

Pink, the dorsal area irrorated with small white spots; dorsal and subdorsal lines white; a broad pale yellow lateral stripe; head greenish.

*3163. **Perigea metarhoda**, n. n. (Plate CXVII. fig. 7.)

Eagada dinawa, Beth.-Baker, Nov. Zool. xiii. p. 208 (1906), nec *Perigea dinawa*, p. 194.

Xanthoptera dinawa, Beth.-Baker, Nov. Zool. xiii. p. 210 (1906).

♂. Head and thorax ochreous tinged with rufous and mixed with some dark brown; palpi black except at base and base of 3rd joint; antennæ brown; pectus and legs ochreous white slightly irrorated with brown; abdomen dark brown mixed with greyish, the ventral surface ochreous tinged with rufous. Fore wing ochreous white tinged with rufous and irrorated with blackish; subbasal line represented by two faint well separated lines, angled outwards below costa, then oblique to vein 1; antemedial line faint, with slight black points on it, excurved below costa, then oblique and incurved at vein 1; claviform absent; orbicular and reniform pale, the former round, the latter somewhat constricted at middle and with black point in lower part, defined by a dark brown patch between, below and beyond them extending to submedian fold and postmedial line, which is faint, double, bent outwards below costa, then minutely dentate, oblique below vein 4, some black striæ beyond it from costa; two obliquely placed dark brown marks from apex to postmedial line at vein 6; subterminal line very indistinct, pale, minutely waved, with black points on it at veins 4, 3; a terminal series of black points. Hind wing pink, the terminal area suffused with fuscous brown; a slight discoidal lunule, traces of a postmedial line from costa to vein 2 and terminal series of black points to vein 2; the underside whitish, the costal and terminal

areas irrorated with brown, a brown discoidal spot, minutely crenulate postmedial line excurved from below costa to vein 2.

Ab. 1. Fore wing more strongly suffused with rufous and with hardly a trace of the brown shade between below and beyond the stigmata.

Hab. Br. N. Guinea, Dinawa (*Pratt*), types † ♂ in Coll. Bethune-Baker. *Exp.* 30 millim.

3164. **Perigea pyrostigma**, n. sp. (Plate CXVII. fig. 8.)

♂. Head and thorax dark brown mixed with yellowish; palpi blackish at sides; tarsi black ringed with yellowish; abdomen yellowish dorsally suffused with brown, ventrally irrorated with brown. Fore wing yellowish suffused with dark brown leaving some yellow on antemedial area below the cell, beyond postmedial line below costa and above inner margin and at apex; subbasal line yellow, waved, from costa to submedian fold; antemedial line defined by yellowish on inner side, waved, angled inwards on vein 1; orbicular yellow with red centre and defined by brown, small, round; reniform a small yellow spot defined by red with four yellow points round it and small white spot below it; postmedial line indistinct, dark, with yellowish spot at costa, strongly bent outwards below costa, then dentate and produced to a double series of black points on the veins, incurved at submedian fold, some yellow points beyond it on costa; subterminal line diffused, brown, excurved at vein 7 and middle; a terminal series of minute black points. Hind wing whitish suffused with brown especially on the veins and terminal area; a slight discoidal spot; a fine dark terminal line; cilia yellowish white; the underside whitish irrorated with brown, a small black discoidal spot, postmedial series of points on the veins, and terminal series of slight black lunules.

Hab. Argentina, Tucuman, Los Vasquez (*Dinelly*), 1 ♂ type, Gran Chaco, Florenzia (*Wagner*), 2 ♂, 1 ♀. *Exp.* 26–28 millim.

3165. **Perigea octophora**, n. sp. (Plate CXVII. fig. 9.)

♂. Head, tegulæ and front of thorax deep red, the rest of thorax black-brown; antennæ ringed with white and the basal joint white; metathorax with whitish patch tinged with red; tarsi black, ringed with white; abdomen greyish fuscous, the ventral surface ochreous tinged with red. Fore wing black-brown, the costal area deep red irrorated with ochreous to near apex, expanding at base to below cell and on postmedial area to vein 6, the inner and terminal areas slightly tinged with red; subbasal line red defined by whitish on outer side, angled outwards below costa, then waved and ending at vein 1; an elliptical yellow and red patch below the cell extending to just beyond antemedial line, which is indistinct, blackish, with white spot before it at costa, strongly angled inwards on vein 1 and excurved above inner margin; orbicular with white centre strongly defined by red and incomplete yellow annulus, round; reniform

figure-of-8-shaped, yellow with two white spots in centre defined by red annuli; traces of a waved dark medial line; postmedial line indistinct, dark with white spot at costa, strongly bent outwards below costa, then somewhat dentate and produced to points on the veins, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line indistinct, dark, with whitish striga from costa, excurved below costa and at middle; a terminal series of slight black points. Hind wing fuscous brown with the interspaces of basal half paler; a slight discoidal lunule; cilia grey with dark line near base; the underside whitish, the costal area suffused with red, a black discoidal spot, curved postmedial line with black points on the veins, and terminal series of small lunules.

Hab. N. Peru, Hauncabamba, 2 ♂ type. *Exp.* 32–34 millim.

3166. Perigea leucopis, n. sp. (Plate CXVII. fig. 10.)

♂. Head and thorax fiery red mixed with yellow; palpi blackish at sides; tegulæ and patagia chocolate-red; tarsi blackish ringed with yellow; abdomen fuscous brown, the ventral surface yellowish irrorated with red, sublateral series of small black spots. Fore wing yellow suffused with fiery red, the area from antemedial line to termen suffused with red-brown except costal area and tornus; a double waved red subbasal line from costa to submedian fold, with small yellow spot beyond it in cell; antemedial line brown defined by yellow on inner side, waved, angled inwards to black points on the veins; orbicular and reniform yellow defined by brown and their centres by red, the former round, the latter with its centre figure-of-8-shaped and with small white spot in lower part; a diffused dark medial line, oblique from costa to median nervure, then incurved; postmedial line black, defined on outer side by slight yellow marks towards costa, strongly bent outwards below costa, then dentate and produced to black points on the veins, incurved below vein 4; subterminal line diffused, dark, angled outwards at vein 7, incurved at discal fold and excurved at middle; cilia dark brown. Hind wing dark reddish brown, yellowish towards base; cilia brownish yellow with slight dark line through them; the underside whitish irrorated with brown and red especially on costal and terminal areas, a black discoidal lunule, minutely waved postmedial line with minute black streaks on the veins, and terminal series of small black lunules.

Hab. Brazil, Rio Janeiro (*Wilson*), 1 ♂ type, Petropolis (*Doer*), 1 ♂. *Exp.* 28 millim.

*3167. Perigea pyrosticta. (Plate CXVII. fig. 11.)

Perigea pyrosticta, Druce, A. M. N. H. (8) i. p. 297 (1908).

♂. Head, tegulæ, and patagia orange suffused with red; 3rd joint of palpi, antennæ and vertex of thorax brown; pectus greyish; legs brown, the tarsi with pale rings; abdomen fuscous brown, the ventral surface mixed with white, the claspers yellow. Fore wing dark red-brown, the basal, costal and postmedial areas irrorated

with orange and red; subbasal line yellow, from costa to submedian fold where it is curved inwards, a yellow point beyond it in cell; antemedial line dark defined on inner side by yellow, slightly angled inwards below costa; orbicular yellow defined by dark brown, its centre defined by red, small, round; reniform yellow defined by dark brown, its centre defined by red and white points in lower part, rather constricted at middle; medial line diffused, dark, oblique from costa to lower angle of cell, then inwardly oblique; postmedial line dark with yellow bar at costa, strongly bent outwards below costa, then minutely waved, oblique below vein 5, some yellow points beyond it on costa; subterminal line diffused, dark, defined on outer side by yellow towards costa, excurved below vein 7 and at middle. Hind wing dark brown, the cilia greyish with a dark line through them; the underside white thickly irrorated with brown, the terminal area brown, a dark discoidal point and traces of a curved postmedial line.

Hab. S.E. Peru, S. Domingo (*Ockenden*), type † ♂ in Coll. Druce. *Exp.* 40 millim.

*3168. Perigea naolina. (Plate CXVII. fig. 12.)

Tæniocampa naolina, Schaus, Pr. U.S. Nat. Mus. xxx. p. 104 (1904).

♀. Head and thorax bright rufous, irrorated with golden-yellow especially on tegulæ which have yellow patches; pectus and legs pale rufous; tarsi ringed with white; abdomen grey-brown, the ventral surface whitish. Fore wing brown suffused with fiery red and irrorated with yellow, some purplish fuscous suffusion on postmedial and inner medial areas; antemedial line very indistinct, oblique, waved; orbicular and reniform small, the former irregularly triangular, white with yellow centre, the latter constricted at middle, yellow with some red scales on it and broken up white annulus; an indistinct sinuous black medial line, oblique from costa to median nervure; postmedial line dentate, oblique from costa to vein 6, then inwardly oblique; subterminal line formed of obscure red and yellow spots, angled outwards at vein 7 and excurved at middle. Hind wing brown, the cilia pale with a brown line through them; the underside whitish, the costal and terminal areas irrorated with brown, a black discoidal lunule and sinuous postmedial line showing through to upper side.

Hab. Brazil, Rio Janeiro, type † ♀ in U.S. Nat. Mus. *Exp.* 30 millim.

3169. Perigea ignitincta. (Plate CXVII. fig. 13.)

Hadena ignitincta, Mssn. Stübel's Reise, p. 145, pl. 6. f. 26 (1890).

♂. Head and thorax yellow mixed with fiery-red; pectus yellowish; legs reddish brown, the tarsi ringed with white; abdomen brown, the anal tuft and ventral surface yellowish. Fore wing fiery red mixed with some yellow, the medial part of inner area and the postmedial area except towards costa pale violaceous

brown; a subbasal yellow striga from costa, and small round white spot in cell slightly defined by black on outer side; antemedial line with yellow striga from costa, then very indistinct, brownish, oblique, waved; claviform represented by a small white spot at its extremity defined by black on outer side; orbicular and reniform with yellow and red centres and white annuli defined by black, the former oblique elliptical, open above and at middle of outer side, the latter narrow and constricted at middle; an indistinct dark medial line very oblique from costa to below angle of cell, then inwardly oblique; postmedial line yellowish towards costa, bent outwards below costa, then black and minutely waved, oblique below vein 5, some yellow points beyond it on costa; subterminal line represented by an incurved yellow striga from costa, then by a faint dark waved line; a fine pale line at base of cilia. Hind wing pale yellow-brown; traces of a brown discoidal spot and sinuous postmedial line; a fine pale line at base of cilia; the underside white tinged with yellow, the costal and terminal areas irrorated with brown, a small brown discoidal spot and diffused sinuous postmedial line.

Hab. Ecuador, Jivaria del Pintue, Loja; S.E. Peru, S. Domingo, 1 ♂. *Exp.* 30 millim.

3170. Perigea multipunctata. (Plate CXVII. fig. 14.)

Perigea multipunctata, Druce, A. M. N. H. (7) iii. p. 236 (1899).

♀. Head ochreous suffused with fiery red; thorax red-brown; fore tibiæ and tarsi with ochreous and red spots; abdomen pale red-brown. Fore wing red-brown; a cluster of ten small pinkish-white spots on basal costal area followed by spots above and below submedian fold before the antemedial spots, on costa, in and below cell with three spots beyond them below costa and three below cell; orbicular and reniform represented by confluent clusters of reddish-white spots and with their centres defined by brown annuli, the former round, the latter figure-of-8-shaped; the reniform very large, broken up by brown streaks on the veins and extending to the postmedial line, which is defined on each side by reddish spots at costa, then by a series of small spots on outer side to vein 2, bent outwards below costa, slightly incurved at discal fold, incurved below vein 4, some white points beyond it on costa, a reddish-white patch at apex and on cilia broken up by red streaks on the veins and striæ below apex and on termen; cilia black-brown. Hind wing red-brown with a cupreous gloss, the cilia whitish with a brown line through them; the underside white tinged with rufous and the apex suffused with red-brown, a brown discoidal lunule and diffused sinuous postmedial line.

♂. Hind wing with the interspaces yellowish white except towards termen.

Hab. Gold Coast, Akropong Mts., Aburi (*Sir G. Carter*), 1 ♀; S. Nigeria, Old Calabar, type † ♂ in Coll. Druce. *Exp.* 40 millim.

Genus **MICROPLEXIA**, nov.

Type, *M. elegans*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately scaled, the 3rd moderate; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed almost entirely with rough scales, the pro- and metathorax with spreading crests; build slender; tibiæ moderately fringed with hair; abdomen with dorsal series of crests, the crest on 4th segment very large. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the basal half white, the outer half of medial area with black band ..... *elegans*.
B. Fore wing with the basal half not white.
a. Fore wing with the medial area white ..... *albopicta*.
b. Fore wing with the medial area not white.
a^1. Head and tegulæ not green.
a^2. Fore wing with orange-red suffusion before the antemedial and beyond the postmedial lines and at apex. *aurantiaca*.
b^2. Fore wing without orange-red suffusion.
a^3. Fore wing with the terminal area pale rufous ..... *muscosa*.
b^3. Fore wing with the terminal area concolorous.
a^4. Fore wing red-brown suffused with purplish fuscous and with a postmedial pale patch on costa ..... *ferrea*.
b^4. Fore wing with the ground-colour ochreous ..... *nephelea*.
b^1. Head and tegulæ green ..... *discreta*.

3171. Microplexia elegans.

Erastria elegans, Saalm. Lep. Madag. p. 347, f. 242 (1891).

♂. Palpi, frons, and antennæ black; vertex of head white with some rufous scales; tegulæ white at middle, black at sides; patagia blackish mixed with rufous and white; thorax white with black patch on metathorax; pectus and legs black mixed with white;

Fig. 56.—*Microplexia elegans*, ♂. ⅔.

the tarsi ringed with white; abdomen white, the dorsal crests black, the anal tuft yellowish, the ventral surface mostly black. Fore wing with the basal half white irrorated with a few reddish and black scales, the costal area pale purplish brown with a black and white point at costa; subbasal line black, from costa to just

below cell and with white mark beyond it on median nervure; traces of a double waved antemedial line; a medial black band, its inner edge slightly curved, its outer somewhat excised in cell, then bounded by the postmedial line; orbicular a minute black annulus on the black band; reniform very small, white defined by black, somewhat elliptical; terminal area pale purplish brown; postmedial line black slightly defined by whitish on outer side, strongly below vein 2, strongly bent outwards below costa, at vein 4 bent inwards to lower angle of cell, angled inwards at vein 1, the postmedial costal area black with some white points on costa; an indistinct blackish subterminal line, incurved below vein 3; cilia black. Hind wing white, the costal and apical areas suffused with pale purplish brown; traces of a postmedial line strongly incurved below vein 4, then again excurved; cilia black on apical half then white; the underside with the costal area suffused and irrorated with black, a black discoidal spot.

♀. Hind wing with the whole terminal area suffused with purplish brown.

Hab. Madagascar, Betsileo (*Cowan*), 1 ♂, 1 ♀. *Exp.*, ♂ 18, ♀ 20 millim.

3172. Microplexia albopicta.

Anthophila albopicta, Saalm. Lep. Madag. p. 370, f. 250 (1891).

♂. Head and thorax red-brown, the vertex of head and metathorax white; pectus and legs mostly white, the tarsi red-brown ringed with white; abdomen pale yellow, the basal crests red-brown. Fore wing with the basal area red-brown irrorated with white, the medial area silvery white slightly irrorated with blackish, the terminal area red-brown; subbasal line represented by white striæ defined on each side by blackish from costa and cell; antemedial line double filled in with white, very indistinct except at costa, erect; orbicular and reniform small, defined by black, the former round; the medial part of costa red-brown with some dark marks and conjoined to a brown patch in cell between the stigmata; an indistinct oblique waved line from lower angle of cell to inner margin; postmedial line double filled in with white, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some white points beyond it on costa; traces of a minutely waved dark subterminal line, excurved below vein 7 and at middle and with whitish patches on it at costa and tornus; a slight dark terminal line. Hind wing pale yellow, the terminal area tinged with rufous except towards tornus; the underside whitish tinged with yellow and slightly irrorated with brown, a small brown discoidal spot and indistinct curved postmedial line.

♀. Thorax and base of fore wing with more white.

Hab. Madagascar, Betsileo (*Cowan*), 1 ♂, 1 ♀. *Exp.* 22 millim.

3173. Microplexia aurantiaca.

Erastria aurantiaca, Saalm. Lep. Madag. p. 341, f. 192 (1891).

♂. Head and thorax clothed with orange-red and white scales mixed; tarsi golden brown ringed with white; abdomen white mixed with some golden brown. Fore wing white mostly suffused with orange-red and dark red-brown, the medial area black-brown from subcostal nervure to submedian fold; subbasal line represented by a dark brown point below costa and two below cell; antemedial line diffused, white with some orange-red before it at middle, waved, obliquely curved; orbicular represented by a small white spot, the reniform by a small white lunule; postmedial line white defined by orange-red on outer side, bent outwards below costa, then minutely dentate, slightly angled inwards at discal fold and incurved below vein 4, the costa beyond it dark brown with some small white spots on it; subterminal line white defined by dark red-brown on inner side, oblique towards costa, then minutely dentate, excurved at middle and angled inwards in discal and submedian folds, some dark red-brown beyond it and orange-red at apex; a terminal series of dark points defined by small white lunules on inner side; cilia white intersected with orange and with orange line through them, wholly dark brown at apex. Hind wing whitish tinged with pale purplish brown; cilia white tinged with brown at base; the underside white, the costal area irrorated with deep red except at base, a small red discoidal spot, minutely waved postmedial line and diffused subterminal line.

Hab. Madagascar, Betsileo (*Cowan*), 4 ♂. *Exp.* 24 millim.

3174. Microplexia muscosa.

Erastria muscosa, Saalm. Lep. Madag. p. 338, f. 241 (1891).

♂. Head, thorax, and abdomen ochreous mixed with red-brown, the large genital tufts pale yellow. Fore wing ochreous suffused with red-brown and with dark brown to the postmedial line; subbasal line whitish, from costa to submedian fold, with some rough pale yellow-green scales before it; antemedial line whitish, oblique, waved, with a patch of rough pale yellow-green scales beyond it from costa to below the cell; orbicular and reniform small, defined by black, the former round with rough greenish scales in centre, the latter with red-brown centre and some greenish scales on edges; some pale marks on medial part of costa; postmedial line whitish, very strongly bent outwards below costa, excurved to vein 4, then incurved and again excurved in submedian interspace; the postmedial costal area dark brown with some whitish points on costa; subterminal line absent; a terminal series of dark points and striæ; cilia yellow tinged with rufous and with a few dark scales. Hind wing yellowish, the basal half and costal area tinged with rufous, the rest of wing overlaid with rough

whitish scales; the underside whitish irrorated and in parts tinged with red-brown, a dark discoidal spot and diffused curved postmedial line.

Hab. Madagascar, Betsileo (*Cowan*), 1 ♂. *Exp.* 26 millim.

3175. Microplexia ferrea, n. sp. (Plate CXVII. fig. 15.)

♀. Palpi and frons red-brown; vertex of head white; antennæ brown; thorax red-brown mixed with some white especially on vertex; tarsi ringed with white; abdomen red-brown mixed with some whitish. Fore wing red-brown largely suffused with purplish fuscous especially on medial and terminal areas, and irrorated with a few white scales especially on basal half of medial area; a triangular yellowish-white patch tinged with rufous on costal area beyond the postmedial line; subbasal line represented by a white striga from costa; antemedial line white, incurved in submedian interspace and excurved above inner margin, a yellowish patch before it below the cell, a dark brown patch on inner area and a green patch beyond it on inner margin; orbicular minute, round, with white centre defined by some black scales, a slight black streak in discal fold from it to reniform, which is small, greenish white, undefined; postmedial line indistinctly double, filled in with white and excurved from costa to vein 5, then oblique and with series of minute black marks beyond it; subterminal line absent; a terminal series of minute white points. Hind wing dark reddish brown; cilia ochreous white with some brown scales. Underside of fore wing dark brown with large rufous patch on apical area and some white points on costa; hind wing white irrorated with red-brown, the costal area except towards base and apical area suffused with brown, a brown discoidal spot and rather diffused postmedial line excurved to vein 2, then incurved.

Hab. Madagascar, Betsileo (*Cowan*), 1 ♀ type. *Exp.* 20 millim.

*3176. Microplexia nephelea. (Plate CXVII. fig. 16.)

Naranga nephelea, Mab. Ann. Soc. Ent. Fr. 1899, p. 731.

♂. Head, thorax, and abdomen ochreous tinged with rufous; pectus, legs, and ventral surface of abdomen whitish tinged with brown. Fore wing greyish ochreous suffused and irrorated with rufous; subbasal line represented by a slight pale striga from costa; antemedial line indistinct, pale, slightly defined on each side by rufous; orbicular represented by a fuscous point, the reniform by a somewhat larger spot with oblique rufous bar from costa to it; postmedial line double, rufous, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some slight pale points beyond it on costa; subterminal line rufous, obliquely curved from costa to termen below apex, then indistinct, minutely waved; a terminal series of dark points. Hind wing ochreous

suffused with red-brown; the underside whitish slightly irrorated with brown, a rather diffused postmedial line, excurved below costa, then oblique.

Hab. ? Madagascar, type † ♂ in Coll. Mabille. *Exp.* 18 millim.

3177. Microplexia discreta.

Anthophila discreta, Saalm. Lep. Madag. p. 368, f. 233 (1891).

♂. Head and tegulæ golden green; palpi mostly brown; antennæ whitish ringed with brown; tegulæ with black band at base; thorax red-brown with blackish patch on metathorax; pectus and legs green; the tarsi black ringed with white; abdomen grey suffused with brown, the basal crest yellowish, the next two black and the medial crest red. Fore wing with the basal area rufous; subbasal line indistinct, double filled in with greenish, curved, from costa to submedian fold; antemedial line white, obliquely curved, defined on outer side by rufous at costa, then by black-brown; the terminal half of wing pale purplish grey; reniform represented by a small round white spot; postmedial line very indistinct, double, minutely waved, filled in by whitish, excurved from costa to vein 4, then incurved, some whitish points beyond it on costa; subterminal line indistinct, blackish, waved, defined by golden green suffusion on outer side, incurved below costa and excurved at middle; a terminal series of slight dark striæ with white points at extremity of the veins; cilia purplish grey at base, rufous at tips. Hind wing whitish uniformly suffused with pale purplish brown; cilia white tinged with greenish ochreous towards apex; the underside white, the costal and apical areas irrorated with purple-brown, a discoidal spot, sinuous postmedial line with patches beyond it below apex and at submedian fold, and fine black terminal line.

Hab. Madagascar, Betsileo (*Cowan*), 2 ♂. *Exp.* 20 millim.

Genus ARBORICORNIS.

	Type.
Arboricornus, Hmpsn. Moths Ind. ii. p. 258 (1894)	*rubra.*

Proboscis fully developed; palpi typically obliquely upturned, the 2nd joint reaching about middle of frons and moderately fringed with hair in front, the 3rd moderate; frons smooth; eyes large, round; antennæ of male bipectinate with long branches to apex; thorax clothed with hair and scales mixed, the pro- and metathorax with small spreading crests; build slender; tibiæ moderately fringed with hair; abdomen with large dorsal crests on 2nd and 3rd segments. Fore wing short and broad, the apex rounded, the termen evenly curved and hardly crenulate, the tornus with scale tooth; veins 3 and 5 from near angle of cell; 6 from upper angle; 7, 8, 9, 10 stalked; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

Sect. I. Palpi obliquely upturned.

3178. Arboricornis rubra.

Arboricornus ruber, Hmpsn. Moths Ind. ii. p. 258 (1894).

♂. Head and thorax black-brown mixed with some red-brown; tarsi with slight pale rings; abdomen red-brown, the crests black-brown. Fore wing very dark red-brown with a patch of pale red-brown on inner medial area, some pale red-brown before costal half of postmedial line and a spot on postmedial area below costa; antemedial line indistinct, double, filled in with some pale red-brown, strongly excurved; claviform represented by a slight black streak, the orbicular by a small black spot; reniform a narrow greyish bar defined by some black scales; medial line indistinct, diffused and oblique from lower angle of cell to inner

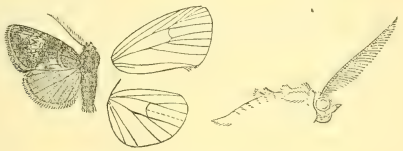


Fig. 57.—*Arboricornis rubra*, ♂. ½.

margin; postmedial line dark brown defined by pale red-brown on outer side, minutely waved and slightly excurved from below costa to vein 2, then oblique, some pale points beyond it on costa; subterminal line indistinct, dark, diffused, defined on outer side by a pale bar from costa, angled outwards at vein 7 and excurved at middle; a terminal series of pale points. Hind wing ochreous strongly suffused with silky red-brown; cilia ochreous at tips; the underside with slight dark discoidal spot and traces of sinuous postmedial line.

Hab. Assam, Khásis, 2 ♂, Nagas, type † in Coll. Rothschild. *Exp.* 24–28 millim.

Sect. II. Palpi porrect, extending about twice the length of head, the 3rd joint downturned.

3179. Arboricornis chrysopepla, n. sp.

♂. Head and thorax yellow tinged with red, the vertex of thorax whitish; palpi, antennæ, and legs red-brown; abdomen yellowish white irrorated with brown, the crests blackish. Fore wing golden yellow tinged with red; a brownish patch at base of costa; antemedial line very indistinct, rufous, waved, an oblique red-brown shade from costa just beyond it to median nervure; black points at lower and upper angles of cell; postmedial line

rather diffused, rufous defined by whitish on outer side, double and oblique from costa to vein 6, almost obsolete and curved inwards to vein 2, then erect; subterminal line rufous, diffused, oblique from apex to vein 6 near postmedial line, then excurved at middle; a fine rufous terminal line. Hind wing white, the apex and inner margin towards tornus irrorated with rufous;

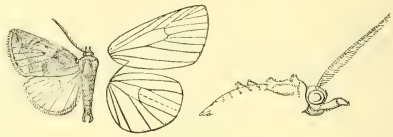


Fig. 58.—*Arboricornis chrysopepla*, ♂. ½.

cilia with some brown spatulate scales towards tornus; the underside with the costal area slightly irrorated with brown towards base.

Hab. Uganda, Ruwenzori, 6000′ (*Wollaston*), 1 ♂ type. *Exp.* 28 millim.

Genus CORYTHURUS.

Type.

Corythurus, Hmpsn. Ill. Het. B. M. ix. p. 112 (1893) ..... *nocturna*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching vertex of head and slightly fringed with hair in front, the 3rd very long, in male tufted with very long hair on inner side and recurved over vertex of head; frons smooth; eyes large, rounded; antennæ of male ciliated; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibiæ fringed with long hair; abdomen with dorsal series of crests, the male with cylindrical tuft of very long hair from extremity. Fore wing with the apex rounded, the termen evenly curved and crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3180. Corythurus nocturna.

Corythurus nocturna, Hmpsn. Ill. Het. B. M. ix. p. 113, pl. 165. figs. 4, 10 (1893); id. Moths Ind. ii. p. 244.

♂. Head and thorax grey mixed with dark brown, the tegulæ red-brown with the base and tips grey; tarsi fuscous ringed with white; abdomen fuscous brown, the anal tuft slightly whitish at base and tips. Fore wing grey suffused and irrorated with pale brown and tinged with rufous especially on postmedial area; a fuscous patch at base of inner margin; subbasal line indistinct, double, reddish, angled outwards below costa and ending at submedian fold, a broad band of rufous beyond it suffused and irrorated with black from costa to vein 1; antemedial line in-

distinct, rufous, double, waved; claviform absent; orbicular small, faintly defined by brown, round; reniform represented by a black discoidal bar with a black streak from it to subterminal line above vein 4; traces of a minutely waved medial line; postmedial line double, oblique from costa to vein 5, then incurved and slightly waved; subterminal line whitish, waved, incurved below costa and angled inwards in discal fold and with black streak from it to termen above vein 5 and slight streak below vein 4; a terminal

Fig. 59.—*Corythurus nocturna*, ♂. ¼.

series of small black lunules; cilia chequered black and white. Hind wing dark fuscous brown with a slight reddish gloss; the underside rather paler except terminal area, a black discoidal lunule and curved postmedial line.

♀. Greyer with very slight rufous tinge; fore wing with the antemedial area black from costa to submedian fold, the postmedial area black from costa to vein 3.

Hab. Ceylon, Colombo (*Green*), 1 ♂ type, Udagama (*Green*), 1 ♀. *Exp.*, ♂ 54, ♀ 44 millim.

Genus **OLIGIA**.

	Type.
Oligia, Hübn. Verz. p. 213 (1827)	*strigilis*.
Miana, Steph. Ill. Brit. Ent., Haust. iii. p. 11 (1829)	*literosa*.
Photedes, Led. Noct. Eur. pp. 44 & 189 (1857)	*captiuncula*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and fringed with hair in front, the 3rd short, blunt, naked; frons smooth; eyes large, rounded; antennæ of male ciliated; head and thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal series of crests on basal segments. Fore wing triangular, the apex rounded, the termen evenly curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below angle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Mid and hind tibiæ of male fringed with long hair on upper side; abdomen with tufts of long hair from base.

A. Hind wing of male clothed with rufous scales to near termen on underside.

3181. Oligia hypothermes, n. sp.

♂. Head, thorax, and abdomen rufous mixed with dark brown; mid and hind tibiæ with fiery red fringes of hair, the abdominal tufts dark brown. Fore wing rufous suffused and irrorated with dark brown leaving a paler patch beyond postmedial line on inner area; subbasal line indistinct, double, waved, angled inwards in cell and ending at submedian fold; antemedial line indistinctly double, waved, excurved below cell; claviform small, faintly defined by black; orbicular small, defined by black, round; reniform incompletely defined by black and with whitish bar on outer edge, angled inwards on median nervure; a slight waved black medial line; postmedial line slightly defined by rufous on outer side, somewhat bent outwards below costa, then

Fig. 60—*Oligia hypothermes*, ♂. ½.

waved, incurved below vein 7, then oblique to vein 4 near subterminal line, then strongly incurved, some pale points beyond it on costa; subterminal line indistinct, pale, excurved below vein 7 and at middle and angled inwards at discal and submedian folds; a terminal series of small black lunules; cilia rufous mixed with dark brown. Hind wing rufous; the underside clothed with fiery red hair to near termen.

♀. Fore wing darker brown to postmedial line; hind wing rufous tinged with brown; the underside pale tinged with rufous and irrorated with brown, a dark discoidal spot and sinuous postmedial line.

Hab. Gold Coast, Aburi, Akropong Mts. (*Carter*), 1 ♂, 1 ♀ type. *Exp.* 26 millim.

B. Hind wing of male on underside less strongly clothed with pinkish scales to postmedial line.

3182. Oligia melanodonta, n. sp.

♂. Head and thorax red-brown mixed with dark brown and greyish; palpi with the 2nd joint blackish at sides; frons black at sides; legs with the fringes of hair on femora and tibiæ rufous, the tarsi fuscous with whitish rings; abdomen rufous suffused with

dark brown. Fore wing rufous suffused with dark brown and irrorated with black; subbasal line represented by double black striæ from costa and cell; antemedial line double filled in with greyish, slightly angled outwards below costa, then waved and rather oblique; claviform small, slightly defined by black; orbicular small, indistinct, with greyish annulus defined by black, round; reniform with white annulus slightly defined by brown, open below and somewhat angled inwards on median nervure; an indistinct diffused dark medial line, oblique from costa to median nervure; postmedial line black defined by whitish on outer side, bent outwards below costa, then dentate, oblique below vein 4, some whitish points beyond it on costa; postmedial line indistinct,

Fig. 61.—*Oligia melanodonta*, ♂. ½.

pale, waved, defined on inner side by a dark patch on costal area and slight dentate marks at middle, interrupted at veins 5 and 2 by diffused wedge-shaped black-brown patches from termen to postmedial line; a terminal series of small black lunules; cilia rufous and dark brown intersected by whitish at the veins. Hind wing dark reddish brown, the cilia whitish at tips; the underside whitish suffused with pinkish scales to postmedial line, a blackish discoidal spot, curved postmedial line bent inwards at vein 2, and subterminal band diffused to termen from apex to vein 2.

Hab. NIGERIA, Old Calabar (*Crompton*), 2 ♂ type. *Exp.* 32 millim.

SECT. II. Tibiæ and tarsi of male normal.

A. Fore wing of male with fan of large scales in cell on underside.
  a. Fore wing with the orbicular and reniform confluent on median nervure ..... *ptyophora*.
  b. Fore wing with the orbicular and reniform not confluent on median nervure ..... *nadgani*.

3183. **Oligia ptyophora**, n. sp.

Head and thorax greyish mixed with brown and black; tarsi black ringed with grey; abdomen grey mixed with fuscous, the crests black. Fore wing red-brown tinged with grey and suffused with fuscous on basal, inner and terminal areas; subbasal line represented by black striæ from costa and cell; antemedial line formed of black striæ, somewhat oblique, waved and with short black streaks before it in cell, submedian fold and above inner

margin; orbicular and reniform pale brownish incompletely defined by black and open above, the former with slight dark centre, oblique elliptical, the latter with fuscous centre, extending to well below the cell, angled inwards on median nervure and slightly confluent with the former; a black bar from middle of costa and traces of a waved line on inner area; postmedial line black, slightly bent outwards below costa, then minutely waved, strongly excurved

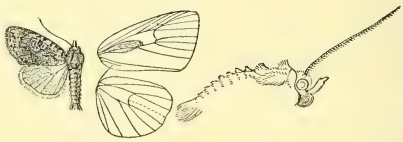


Fig. 62.—*Oligia ptyophora*, ♂. ½.

to vein 4, then oblique to submedian fold, some slight points beyond it on costa; subterminal line represented by a sinuous grey band from costa to vein 6, spot at middle and oblique striga at tornus; a terminal series of black striæ; cilia blackish. Hind wing whitish suffused with brown except on costal area; cilia white mixed with grey with white line at base followed by a dark line; the underside ochreous white irrorated with fuscous, a fuscous discoidal spot, curved minutely waved postmedial line, and terminal series of slight black lunules.

Ab. 1. Fore wing with patch of white suffusion in and below end of cell.

Hab. Punjab, Simla (*Harford*), 1 ♂, 2 ♀, Dalhousie (*Harford*), 1 ♂ type; Sikhim, 1800′ (*Dudgeon*), 1 ♀. *Exp.* 24–28 millim.

3184. Oligia nadgani.

Selepa nadgani, Hmpsn. Ill. Het. B. M. viii. p. 87, pl. 146. f. 6 (1891) id. Moths Ind. ii. p. 298.

♀. Head and thorax red-brown mixed with black and grey; tegulæ with medial black line; patagia edged with blackish above and at extremity; tarsi black ringed with white; abdomen grey suffused with fuscous brown. Fore wing red-brown mixed with greyish and mostly suffused with fuscous black except on medial area; a strong oblique black subbasal line from costa to vein 1; a strong oblique waved black antemedial line; claviform represented by a diffused brown mark; orbicular and reniform defined by brown, the former round, the latter dilated below, extending to well below cell and with fuscous spot in lower part; an oblique brown bar from costa to reniform; postmedial line double, the inner line indistinct except at costa, minutely waved, excurved from costa to

vein 4, then incurved, some greyish points beyond it on costa; subterminal line black, irregularly dentate, defined by greyish on outer side towards costa, at middle, and towards tornus, excurved below vein 7 and at middle, and bent outwards to tornus; a terminal series of small black lunules; cilia with fine pale line at base. Hind wing fuscous brown; cilia with a fine pale line at base and greyish tips; the underside white irrorated with fuscous, a black discoidal lunule, postmedial line strongly excurved and crenulate from costa to vein 3, then incurved, a terminal series of black lunules.

Hab. Madras, Nilgiris, W. Slopes, 3000′ (*Hampson*), 1 ♀ type. *Exp.* 30 millim.

B. Fore wing of male normal.
  a. Fore wing with the subterminal line distinctly dentate.
    a′. Fore wing with **U**-shaped white mark on lower edge of reniform ..... *ypsilon.*
    b′. Fore wing without **U**-shaped white mark on lower edge of reniform.
      a^2. Fore wing with the ground-colour fuscous.
        a^3. Fore wing with the costal half of medial area largely variegated with white ..... *paupera.*
        b^3. Fore wing with the costal half of medial area slightly irrorated with white ..... *angusta.*
      b^2. Fore wing violaceous grey suffused with dark brown ..... *glaucescens.*
      c^2. Fore wing ochreous suffused with red-brown.
        a^3. Fore wing with the postmedial line slightly incurved below vein 4 and widely separated from the lower extremity of reniform..... *pallidisca.*
        b^3. Fore wing with the postmedial line strongly incurved below vein 4 and approximated to the lower extremity of reniform ..... *glaucostigma.*
  b. Fore wing with the subterminal line excurved at middle and not dentate.
    a^1. Fore wing without pale oblique band from apex to inner margin beyond postmedial line.
      a^2. Fore wing with dark costal patches on basal and postmedial areas ..... *vulgaris.*
      b^2. Fore wing without dark costal patches on basal and postmedial areas.
        a^3. Fore wing with the postmedial line slightly incurved below vein 4 and widely separated from the lower extremity of reniform.
          a^4. Fore wing without dark streak from claviform to postmedial line ..... *sordida.*
          b^4. Fore wing with dark streak from claviform to postmedial line ..... *chasiana.*
        b^3. Fore wing with the postmedial line strongly incurved below vein 4 and more or less approximated to the lower extremity of reniform.
          a^4. Fore wing with pale fascia on inner area from base to the pale postmedial area, its upper edge sinuous and extending to near costa at base.

a^5. Fore wing with blackish streak in terminal part of submedian fold ..... *ophiogramma.*
b^5. Fore wing without blackish streak in terminal part of submedian fold ..... *albirivula.*
b^4. Fore wing without pale fascia on inner area.
a^5. Fore wing without white streaks on median nervure and bases of veins 4, 3.
a^6. Fore wing with the postmedial line not touching lower extremity of reniform.
a^7. Fore wing bright rufous with the postmedial area white except towards costa.
a^8. Fore wing with the postmedial area violaceous white.
a^9. Fore wing with the obicular and reniform large, yellowish ..... *violacea.*
b^9. Fore wing with the orbicular and reniform smaller and not yellowish ..... *bridghami.*
b^8. Fore wing with the postmedial area not violaceous white..... *egens.*
b^7. Fore wing bright rufous, the postmedial area slightly paler ..... *fasciuncula.*
c^7. Fore wing ochreous suffused in parts with red-brown.
a^8. Fore wing with the orbicular a white point..... *tapetä.*
b^8. Fore wing with the orbicular well-developed, oblique elliptical ..... *scolopacina.*
c^8. Fore wing with the orbicular bent outwards at lower extremity..... *dinava.*
d^7. Fore wing greyish tinged with red-brown and blackish.
a^8. Fore wing with the postmedial area paler than the ground-colour.
a^9. Fore wing with the ante- and postmedial lines well separated above inner margin.
a^{10}. Fore wing with the terminal area darker than the ground-colour except at apex ..... *fractilinea.*
b^{10}. Fore wing with the terminal area concolorous.
a^{11}. Fore wing with the postmedial line excurved from below costa to vein 4, then incurved ..... *strigilis.*
b^{11}. Fore wing with the postmedial line oblique from below costa to vein 5, then incurved.
a^{12}. Fore wing tinged with red-brown ..... *instructa.*
b^{12}. Fore wing greyish suffused in parts with brown and black. *ambigua.*
b^9. Fore wing with the ante- and postmedial lines approximated just above inner margin..... *exhausta.*

b^8. Fore wing with the postmedial area not paler than the ground-colour.
a^9. Fore wing purplish grey, a black streak in submedian fold between ante- and postmedial lines.
a^{10}. Fore wing with series of black points beyond postmedial line . *una.*
b^{10}. Fore wing without series of black points beyond postmedial line . *minuscula.*
b^9. Fore wing dark red-brown without black streak in submedian fold between ante- and postmedial lines ..... *misera.*
b^6. Fore wing with the postmedial line touching lower extremity of reniform.
a^7. Fore wing with the terminal area not darker than the postmedial area.
a^8. Fore wing with the medial area blackish except beyond the reniform.
a^9. Fore wing with the costal area black to near base, the inner basal area grey.
a^{10}. Size large, 34–40 millim. ..... *areta.*
b^{10}. Size small, 28 millim. ..... *arctides.*
b^9. Fore wing with the basal costal area pale, the inner area suffused with brown ..... *diversicolora.*
b^8. Fore wing wholly suffused with black to the postmedial line..... *vulnerata.*
c^8. Fore wing with the medial area not suffused with black.
a^9. Fore wing strongly tinged with rufous or red-brown.
a^{10}. Fore wing with the reniform a pure white lunule defined by black..... *leuconephra.*
b^{10}. Fore wing with the reniform grey defined by black on inner side only ..... *literosa.*
b^9. Fore wing grey with hardly any brown tinge ..... *semicana.*
b^7. Fore wing with the terminal area darker than the postmedial area.
a^8. Fore wing with the ground-colour grey with hardly any rufous or red-brown tinge.
a^9. Fore wing with the medial area tinged with brown ..... *subjuncta.*
b^9. Fore wing with the medial area suffused with black ..... *tonsa.*
c^9. Fore wing with the basal half wholly suffused with black..... *lævigata.*
b^8. Fore wing strongly tinged with rufous or red-brown.
a^9. Hind wing greyish tinged with brown ..... *furuncula.*
b^9. Hind wing black-brown ..... *captiuncula.*

*b*5. Fore wing with the median nervure and veins 4, 3 streaked with white on medial area.
*a*6. Fore wing with veins 4, 3 streaked with white beyond postmedial line ..... *havorthi.*
*b*6. Fore wing with veins 4, 3 not streaked with white beyond postmedial line ... *obtusa.*
*b*1. Fore wing with pale oblique band from apex to inner margin beyond postmedial line ..... *includens.*
c. Fore wing with the subterminal line replaced by dark streaks in the interspaces..... *nyctichroa.*

3185. Oligia ypsilon.

Gerbatha ypsilon, Butl. Ill. Het. B. M. iii. p. 24, pl. 47. ff. 1–2 (1879).

Head and thorax grey irrorated with reddish brown; palpi black at sides; frons with black bar; tegulæ with some black scales at tips; fore tibiæ and tarsi black ringed with white; abdomen grey suffused with brown. Fore wing grey irrorated with black-brown; subbasal line represented by slight black marks below costa and cell; antemedial line black, oblique, strongly waved; claviform and orbicular absent; reniform with faint pale annulus becoming pure white below and slightly defined by black above, constricted at middle and narrowing below, with a black streak before it in lower part of cell and beyond it above vein 4 to subterminal line; a broad oblique diffused brown medial shade met below angle of cell by an oblique shade from costa just before apex; postmedial line with small black spot on costa, strongly bent outwards and almost obsolete below costa, then black, excurved and minutely waved to vein 4, then strongly incurved, some whitish points with black striæ between them beyond it on costa; subterminal line white defined by brown on inner side, angled outward at vein 7, then waved, incurved at submedian fold; a terminal series of black lunules; cilia pale brown. Hind wing pale reddish brown, the cilia whitish; the underside pale reddish brown with indistinct diffused sinuous postmedial line.

Hab. Japan, Nikko (*Levis*), 1 ♀, Yokohama (*Jonas*, *Pryer*), 1 ♂, 1 ♀ type. *Exp.* ♂ 36, ♀ 40 millim.

3186. Oligia paupera. (Plate CXVII. fig. 17.)

Craniophora paupera, Staud. Rom. Mém. vi. p. 394 (1892); id. Cat. Lep. pal. p. 134.
Gerbatha connexa, Leech, Trans. Ent. Soc, 1900, p. 516.

Head and thorax grey mixed with fuscous brown; tarsi black ringed with white; abdomen grey mixed with brown. Fore wing grey-white thickly irrorated with black-brown and tinged in parts with red-brown; subbasal line represented by black points below costa and on median nervure; antemedial line strong, black, slightly angled outwards below costa, then oblique to below cell where it is angled outwards, angled inwards on vein 1 and excurved above inner margin; claviform represented by a diffused white patch with blackish streak below it in submedian fold extending to post-

medial line; orbicular with brownish centre and undefined white annulus, oblique elliptical and somewhat constricted at middle; reniform represented by a curved black bar with diffused whitish annulus; a diffused oblique blackish shade from costa to reniform and indistinct waved curved line from cell to inner margin; postmedial line strongly bent outwards and obsolescent below costa, incurved at discal fold, angled outwards at veins 4, 3, then strongly bent inwards and oblique to inner margin, slightly excurved at vein 1, some white points beyond it on costa; subterminal line indistinct, diffused, whitish, defined on inner side by small somewhat dentate blackish marks, excurved below vein 7 and at middle and incurved at discal and submedian folds; a terminal series of minute dark lunules defined on inner side by minute whitish lunules. Hind wing uniform pale reddish brown; the underside pale greyish irrorated with brown especially on costal area, a blackish discoidal lunule and indistinct curved postmedial line from costa to vein 3.

Hab. E. Siberia, Amurland in Coll. Püngeler; W. China, Chow-pin-sa, 1 ♂, 5 ♀, type *connexa*. *Exp.* 34–38 millim.

3187. Oligia angusta.

Gerbatha angusta, Butl. Ill. Het. B. M. iii. p. 24, pl. 47. f. 2 (1879).

Head and thorax fuscous brown mixed with grey; tarsi black ringed with white; abdomen reddish brown mixed with grey. Fore wing fuscous brown irrorated with grey, the medial costal area irrorated with white; subbasal line black, inwardly oblique, from costa to submedian fold; antemedial line strong, black, slightly angled outwards below costa and more strongly below cell, then incurved and excurved above inner margin; claviform represented by a white spot at its extremity; orbicular and reniform very small with brown centres and white annuli, the former oblique elliptical, the latter a narrow bar slightly angled inwards on median nervure; a dark striga from middle of costa and indistinct waved line from cell to inner margin; postmedial line strongly bent outwards and obsolescent below costa, then strong, black, angled outwards at veins 6, 4, 3, then strongly incurved and slightly angled outwards at vein 1, some white points beyond it on costa; subterminal line formed of dentate whitish marks slightly defined by fuscous on inner side, angled outwards at veins 7, 6, 4, 3, and incurved at discal and submedian folds; a terminal series of minute dark lunules. Hind wing pale reddish brown; a slight dark discoidal lunule; the underside whitish suffused and irrorated with red-brown, a slight dark discoidal lunule and traces of a postmedial line excurved below costa.

Ab. 1. Fore wing with the white spot at end of claviform and white annuli to stigmata obsolescent.

Hab. Japan, Yokohama (*Jonas*, *Pryer*), 2 ♂, 9 ♀, type. *Exp.* 32–38 millim.

3188. Oligia glaucescens.

Daxata glaucescens, Butl. Ill. Het. B. M. vii. p. 81, pl. 133. f. 4 (1889); Hmpsn. Moths Ind. ii. p. 300.
Anophia undara, Swinh. Trans. Ent. Soc. 1890, p. 234.

Head and thorax fuscous mixed with greyish; palpi black at sides; pectus and legs with some whitish, the tarsi black ringed with white; abdomen grey suffused with fuscous. Fore wing grey suffused with fuscous brown and irrorated with black; a waved black subbasal line from costa to submedian fold; antemedial line indistinct, double, waved, oblique; claviform represented by a blackish mark; orbicular absent; reniform with indistinct grey annulus and slight brown lunule in centre with some red on its outer edge and a dark mark before it in cell; two black striæ from medial part of costa and an indistinct oblique line from lower angle of cell to inner margin; postmedial line double, slightly bent outwards below costa, then minutely waved, oblique below vein 4, some white points beyond it on costa; subterminal line grey defined by fuscous suffusion on inner side and with black points before it below costa and at middle, minutely dentate, excurved below vein 7; a terminal series of black points. Hind wing greyish uniformly suffused with brown; the underside grey irrorated with fuscous especially on costal area, the terminal area suffused with fuscous, traces of diffused antemedial and medial lines.

Hab. Punjab, Dharmsâla (*Hocking*), 1 ♂ type; Ceylon, Kuslande (*Mackwood*), 1 ♂; Burma, Rangoon, 1 ♀ type *undara*. *Exp.* 22–26 millim.

3189. Oligia pallidisca.

Erastria pallidisca, Moore, P. Z. S. 1881, p. 372, pl. 37. f. 14; Hmpsn. Moths Ind. ii. p. 300.
Erastria albiorbis, Moore, Lep. Atk. p. 141 (1882).
Erastria fusca, Moore, Lep. Atk. p. 141 (1882).
Erastria nubila, Moore, Lep. Atk. p. 142 (1882).

Head and thorax ochreous mixed with red-brown; palpi with blackish patch at side of 2nd joint; tegulæ with slight brown medial line; tibiæ and tarsi banded with fuscous brown; abdomen pale yellow irrorated with brown, the crests brown at tips. Fore wing ochreous irrorated with red-brown, the basal area suffused with red-brown, some red-brown suffusion beyond postmedial line, the medial area suffused with white; subbasal line double filled in with yellow, from costa to vein 1; a black mark on inner margin near base; antemedial line double filled in with yellow, oblique, minutely waved; orbicular and reniform large, defined by brown, the former with brown centre, round, the latter with fuscous spot in cell, extending to well below the cell; medial line very oblique from costa to reniform, oblique and minutely waved on inner area; postmedial line double filled in with yellow, bent outwards below costa, then minutely waved, incurved below vein 4; some yellow

points beyond it on costa; subterminal line represented by a series of rather diffused yellow lunules, excurved below vein 7 and at middle and bent outwards to tornus, a terminal series of black striæ; cilia fuscous with slight pale lines at base and middle. Hind wing white, the veins, inner and terminal areas tinged with red-brown; a faint discoidal spot; cilia white with a brownish line through them; the underside with the costal area irrorated with brown, a blackish discoidal lunule, a faint curved, waved postmedial line from costa to vein 3 and fine terminal line from apex to vein 2.

Ab. 1. *albiorbis*. Fore wing with the medial area not suffused with white, the orbicular and reniform filled in with white.

Ab. 2. *fusca*. Fore wing with the orbicular and reniform not filled in with white.

Hab. Sikhim (*Atkinson*, *Elwes*, *Dudgeon*), 4 ♂, 9 ♀, types *albiorbis*, *fusca*, *nubila*. *Exp.* 28–34 millim.

*3190. Oligia glaucostigma. (Plate CXVII. fig. 18.)

Bryophila glaucostigma, Hmpsn. Moths Ind. ii. p. 300 (1894).

♂. Head and thorax reddish ochreous mixed with brown; palpi dark brown at sides, whitish in front and at extremity of 2nd joint; tarsi blackish ringed with white; abdomen dark brown, paler at base. Fore wing reddish ochreous suffused with dark brown and irrorated with black; subbasal line represented by double oblique black striæ from costa and cell filled in with whitish; antemedial line indistinct, double filled in with whitish, strongly excurved below the cell; orbicular and reniform with brownish centres and yellowish-white annuli slightly defined by blackish, the former oblique elliptical, the latter rather constricted at middle; a dark bar from middle of costa; postmedial line black, double and filled in with yellowish white at costa, bent outwards below costa, then dentate, excurved to vein 4, then incurved, some pale points beyond it on costa with blackish streaks between them; subterminal line represented by a series of small yellowish-white lunules defined on inner side by small dentate black marks and larger mark in submedian fold, and on outer by slight dark streaks, excurved below vein 7 and at middle and angled inwards at discal and submedian folds; a terminal series of small black lunules; cilia blackish with fine pale line at base and intersected by pale streaks. Hind wing yellowish white, the veins and terminal area tinged with brown; postmedial dark points on veins 3 and 2; a fine brown terminal line; cilia whitish with brown line at middle; the underside yellowish white, the costal area and terminal area to vein 3 irrorated with brown, a brown discoidal spot, crenulate postmedial line bent inwards to costa and incurved below vein 2, a terminal series of small dark lunules.

Hab. Burma, E. Pegu, 4,500′ (*Doherty*), type † ♂ in Coll. Rothschild. *Exp.* 34 millim.

3191. Oligia vulgaris. (Plate CXVII. fig. 19.)

Polydesma vulgaris, Butl. Trans. Ent. Soc. 1886, p. 135.

Head, tegulæ, and patagia grey mixed with red-brown; palpi with some black at sides; frons black at sides; tegulæ with black medial line; patagia with grey upper edge; thorax grey, the metathorax with some brown; tarsi fuscous ringed with whitish; abdomen grey-brown. Fore wing grey tinged with red-brown, a patch of dark brown suffusion on basal costal area extending to submedian fold and with its outer edge oblique, the postmedial area suffused with dark brown from costa to vein 4; subbasal line double, from costa to submedian fold, the outer line angled outwards below costa; antemedial line very indistinct, double, waved, with double black striæ at costa and black point at inner margin; claviform and orbicular very faintly defined by brown, the latter oblique elliptical; reniform with slight whitish annulus, open above and below, oblique oblong, the dark postmedial patch extending to its outer edge; postmedial line double towards costa, bent outwards below costa, then indistinct, minutely dentate and with dark points at the veins, excurved to vein 4, then incurved, some white points beyond it on costa; a broad oblique grey-white fascia from apex to vein 4; subterminal line very indistinct, pale grey, excurved below vein 7 and at middle and angled inwards at discal fold where there is a wedge-shaped patch of dark suffusion beyond it; a terminal series of small black lunules; cilia with a dark line through them. Hind wing pale reddish brown, the terminal area tinged with fuscous; cilia whitish with a dark line through them; the underside grey slightly irrorated with brown, a small discoidal spot, sinuous postmedial line, and diffused fuscous subterminal band.

Ab. 1. Fore wing greyer, the brown patches darker, the lines more distinct.—C. & W. China.

Hab. Japan, Tokio (*Maries*), 4 ♂ type, Yokohama (*Pryer*), 3 ♂, 5 ♀; C. China, Shanghai (*Pryer*), 1 ♀, Kiukiang (*Pryer*, *Pratt*), 2 ♂; W. China, Chang Yang (*Pratt*), 1 ♂. *Exp.* 38–48 millim.

3192. Oligia sordida.

Glottula sordida, Butl. Trans. Ent. Soc. 1881, p. 174.
Gerbatha pseudodyops, Butl. A. M. N. H. (5) xiii. p. 274 (1884).
Segetia variegata. Oberth. Ét. Ent. x. p. 21, pl. 2. f. 1 (1884); Staud. Cat. Lep. pal. p. 164.

Head, thorax, and abdomen grey tinged with brown and mixed with blackish; tarsi blackish with pale rings; abdomen with the dorsal crests blackish at tips, the ventral surface paler. Fore wing brown suffused with grey and irrorated with black, the ante- and postmedial areas slightly tinged with rufous; subbasal line represented by slight black striæ from costa and cell; a blackish patch

on inner margin before the antemedial line, which is black defined by white on inner side especially towards inner margin, oblique, waved, the claviform represented by a slight black spot on its outer edge; orbicular and reniform slightly defined by black, the former round, the latter hardly defined except on inner side; traces of a waved medial line; postmedial line black defined by grey on outer side, bent outwards below costa, then very minutely waved, excurved to vein 4, then incurved, some whitish points beyond it on costa; subterminal line pale rufous defined by fuscous on inner side and with blackish patch before it on costa, excurved below vein 7 and at middle, angled inwards at discal fold and incurved below vein 3, the area beyond it fuscous brown; a terminal series of small black lunules; cilia with blackish line through them and series of blackish spots at tips. Hind wing fuscous brown with a cupreous gloss; cilia whitish at tips; the underside grey irrorated with fuscous and tinged with rufous, a blackish discoidal lunule, curved postmedial line, and diffused subterminal line.

Ab. 1. *pseudodyops*. Fore wing with the ante- and postmedial areas more rufous.

Ab. 2. Fore wing with the ground-colour greyer, the postmedial area bright rufous.

Hab. E. Siberia, Amurland, 3 ♂, 3 ♀, Ussuri; Japan, Yesso (*Pryer*), 5 ♂, 2 ♀ type *pseudodyops*, Hakodaté (*Leech*), 1 ♂, Oiwaké (*Pryer*), 2 ♀, Yokohama (*Maries*, *Pryer*), 9 ♀ type; Corea, Gensan (*Ito*), 3 ♀. *Exp.* 32–40 millim.

3193. **Oligia chasiana.** (Plate CXVII. fig. 20.)

Bryophila khasiana, Hmpsn. Moths Ind. ii. p. 299 (1894).
Bryophila obliquifascia, Hmpsn. Trans. Ent. Soc. 1895, p. 299; id. Moths Ind. iv. p. 513.
Euplexia repetita, Swinh. A. M. N. H. (7) xv. p. 499 (nec Butl.).

Head and thorax ochreous white with some red-brown scales; palpi black at sides except at tips; frons with lateral black bars and slight line above; tegulæ blackish at base and with brown tips; tarsi blackish ringed with white; abdomen ochreous white suffused with brown. Fore wing pale ochreous slightly tinged with rufous and irrorated with brown; traces of a subbasal line angled on median nervure; a diffused curved fuscous band before the antemedial line, which is oblique from costa to submedian fold, then waved, an oblique brown band beyond it to postmedial line at submedian fold, not extending below vein 1 and defined by a black line on outer side; claviform slightly defined by black, acute at extremity and with blackish streak from it to postmedial line; orbicular and reniform slightly defined by black except above, the former oblique elliptical with fuscous centre, the latter with its centre faintly defined by brown, a brown patch between their upper parts with two dark bars above it from costa; postmedial line double, bent outwards below costa, then produced to slight teeth at

the veins, excurved to vein 4, then incurved, some brown points beyond it on costa; subterminal line represented by a series of slight brown marks, with brown patch beyond it at discal fold; a terminal series of slight black lunules; cilia brown with a fine pale line at base. Hind wing pale ochreous tinged with brown especially on terminal area; a faint discoidal lunule; cilia ochreous white with a brown line through them; the underside whitish, the costal and terminal areas irrorated with black, a black discoidal lunule, postmedial line excurved below costa, then waved, and terminal series of small black lunules.

Hab. W. China, Ta-chien-lu (*Pratt*), 1 ♀; Bhutan (*Dudgeon*), 1 ♂ type *obliquifascia*; Assam, Khásis, 1 ♂. *Exp.* 28–32 millim. Type † in Coll. Rothschild.

3194. Oligia ophiogramma.

Noctua ophiogramma, Esp. Schmett. iv. pl. 182. f. 2 (1794); Hübn. Eur. Schmett., Noct. f. 355; Dup. Lép. Fr. vii. p. 135, pl. 109. f. 5; Frr. Neue Beitr. i. pl. 75. f. 3; Steph. Ill. Brit. Ent., Haust. iii. p. 11; Snell. Tijd. v. Ent. 1897, p. 301, pl. 12. f. 3; Staud. Cat. Lep. pal. p. 164.
Noctua biloba, Haw. Lep. Brit. p. 209 (1809).
Miana mærens, Staud. Cat. Lep. pal. p. 164 (1901).

Head and thorax grey tinged with bright rufous especially on vertex of latter, palpi with black scales in front of 2nd joint; frons and vertex of head with black bars; tegulæ whitish at base and with black medial line; patagia with some black scales near upper edge; pectus brown at sides and rufous in front; legs whitish and brown; abdomen whitish tinged with brown, the dorsal crests rufous, a brown dorsal spot on anal segment. Fore wing grey tinged with rufous, the basal costal area and the medial area to below cell dark brown with a leaden gloss, the terminal area with dark patches at middle and above tornus; subbasal line double, waved, from costa to vein 1; antemedial line double, waved, indistinct on the grey area; claviform red-brown slightly defined by black, large and extending to median nervure; orbicular and reniform slightly defined by black, the former round, the latter with dark brown on inner edge; an indistinct waved medial line; postmedial line double at costa, then indistinct, bent outwards below costa, then reduced to a double series of black points on the veins, incurved below vein 4, some whitish points beyond it on costa; subterminal line represented by a rufous shade on its inner side, angled outwards at vein 7, then oblique; the terminal area with the dark patch above tornus emitting a streak in submedian fold to postmedial line; a terminal series of minute black lunules; cilia greyish fuscous with a waved black line through them. Hind wing grey tinged with reddish brown; a diffused dark subterminal band; a fine waved dark terminal line; cilia whitish with a dark line through them; the underside whitish, the costal area tinged with rufous, a dark discoidal spot, sinuous postmedial line, and diffused subterminal band.

Ab. 1. *mœrens*. Ground-colour blackish; fore wing with the grey areas suffused with fuscous.

Hab. Britain, Leech Coll.; France, Sand and Leech Colls.; Jutland; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland; S. Sweden; Rumelia; W. Siberia, Altai; E. Turkestan, Ili; E. Siberia, Ussuri. *Exp.* 32–36 millim.

Larva. Meyr. Brit. Lep. p. 134; Barrett, Lep. Brit. iv. p. 401, pl. 184. f. 3. Dull pinkish ochreous; spiracular line whitish; head dark brown; thoracic plate brown. Food-plant: stems and roots of *Phalaris arundinacea*. 8–5.

3195. **Oligia albirivula**, n. sp. (Plate CXVII. fig. 21.)

♀. Head and thorax whitish mixed with bright rufous; palpi bright rufous; frons with dark lateral bars; tarsi fuscous ringed with whitish; abdomen grey tinged with rufous. Fore wing with the inner and postmedial areas except at costa white, the basal costal area, medial area to submedian fold, and terminal area bright rufous; subbasal line double, waved, from costal to submedial fold, with a slight blackish streak beyond it above vein 1; antemedial line double, angled outwards below costa, incurved in cell, then strongly excurved and slightly angled inwards on vein 1; claviform defined by brown, extending to median nervure; orbicular with slight ochreous annulus defined by brown, elongate elliptical; reniform defined by brown, with whitish centre defined by brown and yellowish annulus on inner side, whitish on outer, somewhat angled inwards on median nervure; postmedial line double, bent outwards below costa, incurved at discal fold and strongly below vein 4, some whitish points beyond it on costa; subterminal line defined by a rufous shade on inner side, angled outwards at vein 7 and to termen at veins 4, 3; terminal area with dark patches at middle and above tornus; a terminal series of black lunules; cilia rufous, mixed with black towards tornus and with series of black spots at tips. Hind wing whitish tinged with brown; a terminal series of dark striæ; the underside whitish irrorated with brown, a slight dark discoidal spot, curved postmedial line, and terminal series of striæ.

Hab. Assam, Khásis, 1 ♀ type. *Exp.* 30 millim.

3196. **Oligia violacea**. (Plate CXVII. fig. 22.)

Hadena violacea, Grote, Bull. Geol. Geog. Surv. Terr. vi. p. 261 (1881); Smith, Cat. Noct. N. Am. p. 141.

♀. Head and thorax white mixed with a few reddish and black scales; frons with lateral blackish bars; abdomen white slightly irrorated with brown and tinged with rufous at sides. Fore wing white suffused with purple, the base yellowish white irrorated with brown, the costal area dark brown irrorated with white from subbasal to subterminal line, the terminal area

yellowish white with diffused blackish patches at middle and above tornus; subbasal line represented by a slight striga from costa; antemedial line indistinct, waved, somewhat oblique; claviform olive-yellow defined by orange; orbicular and reniform well-developed, yellowish white defined by brown, the former round, the latter with olive-yellow round its lower part; traces of an oblique red medial shade; postmedial line indistinct, reddish, bent outwards below costa, then minutely dentate and produced to slight black streaks on the veins, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line whitish slightly defined on inner side by olive-yellow, excurved below vein 7 and at middle; a waved black terminal line; cilia white with series of blackish patches at tips. Hind wing pure white with fine black terminal line; the underside with the costal area slightly irrorated with red and with reddish postmedial striga from costa.

Hab. U.S.A., Colorado, California, Sierra Nevada, Shasta Co., 1 ♀ type. *Exp.* 38 millim.

3197. Oligia bridghami. (Plate CXVII. fig. 23.)

Mamestra bridghamii, Grote & Rob. Proc. Ent. Soc. Phil. vi. p. 17, pl. 3. f. 1 (1866); Smith, Cat. Noct. N. Am. p. 141.

♀. Head and tegulæ white mixed with rufous and brown; palpi brown at tips; frons with lateral brown bars; thorax white with some brown scales near upper edge of patagia; prothoracic crest fiery red; metathoracic crest tinged with ochreous; pectus and legs white mixed with brown, the pectus red in front; tarsi black ringed with white; abdomen white mixed with brown, the crest on 3rd segment red. Fore wing with the costal area dark brown irrorated with white to submedial line; the base white irrorated with brown, then olive-yellow suffused in parts with red and bluish white to postmedial line, the veins streaked with white, the post-medial and terminal areas bluish white; subbasal line double filled in with white, waved, from costa to submedian fold; antemedial line defined by white on inner side, waved, slightly oblique; claviform small, faintly defined by olive with purplish streak beyond it; orbicular and reniform white defined by olive and with some olive in centres, the former round, the latter dilated above and constricted at middle; a waved red medial line oblique from costa to vein 2; postmedial line reddish, bent outwards below costa, then minutely waved and with dark points beyond it on the veins, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line white, defined by olive on inner side and with brown patches beyond it at middle and above tornus, excurved below vein 7, excurved and minutely waved at middle; a waved terminal line expanding into lunules in the interspaces; cilia white mixed with fuscous. Hind wing ochreous white irrorated with brown; the veins brown; the terminal area suffused with brown and tinged with red; a sinuous postmedial line; a fine dark terminal line; cilia

white mixed with fuscous except towards tornus; the underside white, the costal and terminal areas irrorated and suffused with red, a dark discoidal point and curved postmedial and subterminal lines.

Hab. U.S.A., Eastern States, 1 ♀, Massachusetts. *Exp.* 36 millim.

3198. Oligia egens. (Plate CXVII. fig. 24.)

Celæna egens, Wlk. x. 263 (1856); Smith, Cat. Noct. N. Am. p. 144.
Hadena transfrons, Neum. Papilio, iii. p. 139 (1883); Smith, Cat. Noct. N. Am. p. 141.

♂. Head and thorax olive-white mixed with rufous brown and black; palpi rufous mixed with black; frons with lateral dark bars; antennæ ringed brown and white; tegulæ with black medial line; prothoracic crest fiery red; pectus grey, reddish in front; legs black and rufous mixed, the tarsi ringed with white; abdomen greyish more or less mixed with fuscous or rufous, the anal tuft and ventral surface rufous. Fore wing olive to postmedial line, more or less suffused with purplish red, the base whitish, the costal area whitish and black to beyond middle, the postmedial area white, the terminal area olive-brown; subbasal line double filled in with white, waved, from costa to submedian fold; antemedial line defined by white on inner side, waved, angled inwards on vein 1, somewhat oblique; claviform minute, defined by olive; orbicular and reniform small, with olive centres and whitish annuli defined by olive, the former round, the latter narrow and constricted at middle; an indistinct waved medial line oblique from costa to below cell; postmedial line bent outwards below costa, then minutely dentate and produced to slight black streaks on the veins, excurved to vein 4, then incurved, some white points on an olive patch beyond it on costa; subterminal line white defined by olive on inner side, excurved below vein 7 and at middle, the area beyond it olive-brown with black streaks on the veins except at apex which is white; a lunulate dark terminal line; cilia black and grey intersected with reddish. Hind wing greyish nearly uniformly suffused with fuscous black; an indistinct sinuous postmedial line; cilia whitish with a black line through them; the underside grey tinged with fuscous and the costal and terminal areas with red, a discoidal point and curved postmedial line.

Hab. Canada, Hudson's Bay (*Barnston*), 1 ♂ type; Manitoba, Cartwright (*Heath*), 1 ♀, Aweme (*Criddle*), 1 ♀, Alberta, Calgary (*Wolley-Dod*), 14 ♂, High R. (*Baird*), 1 ♂; Br. Columbia. *Exp.* 32–34 millim.

3199. Oligia fasciuncula.

Noctua fasciuncula, Haw. Lep. Brit. p. 215 (1809); Staud. Cat. Lep. pal. p. 165.
Apamea rubeuncula, Donz Ann. Soc. Ent. Fr. vii. p. 430, pl. 12. ff. 3–4 (1838); Herr.-Schäff. Eur. Schmett., Noct. ff. 499–501; Frr. Neue Beitr. v. pl. 468. f. 2.

Miana erratricula, Rmbr. Cat. Lep. S. And. pl. 16. ff. 1–2 (nec Hübn.).
Miana cana, Staud. Cat. Lep. Eur. p. 102 (1871).

Head and thorax bright rufous; tarsi blackish with pale rings; abdomen brown, the anal tuft and ventral surface rufous. Fore wing bright rufous, the antemedial and postmedial areas slightly paler except towards costa; subbasal line absent; antemedial line brown defined by whitish on inner side below the cell, oblique from costa to below cell, then excurved and angled inwards on vein 1; claviform pale rufous faintly defined by brown; orbicular and reniform pale rufous faintly defined by brown, the former oblique elliptical; postmedial line brown, defined by whitish on outer side below vein 3, bent outwards below costa, excurved to vein 4, then strongly incurved, some pale points beyond it on costa; subterminal line indistinct, pale, slightly defined by rufous on inner side, excurved below vein 7 and at middle, then incurved, terminal area somewhat browner except at apex; cilia brown with slight pale line at base. Hind wing brown; cilia whitish with slight brown line near base except towards tornus; the underside grey-brown, the costal area tinged with rufous, a slight discoidal spot, faint curved postmedial line, and traces of diffused subterminal line.

Ab. 1. Darker brown.—Scotland.

Ab. 2. *cana*. Much paler; fore wing grey-white with medial rufous band.—Scotland, Denmark, N. France.

Larva. Meyr. Brit. Lep. p. 137; Barrett, Lep. Brit. v. p. 15, pl. 186. f. 2.

Pinkish ochreous; dorsal line double, pale greyish ochreous enclosing a darker line; subdorsal and lateral lines pale greyish ochreous; head and thoracic plate pale brown. Food-plants, leaves and stems of Grasses. 9–5.

*3200. Oligia tapeta. (Plate CXVII. fig. 25.)

Hadena tapeta, Smith, Proc. U.S. Nat. Mus. xxii. p. 467 (1900); Dyar, Cat. Lep. N. Am. p. 115.

♂. Head and thorax deep red-brown; tegulæ tipped with yellow; patagia with some yellow scales near upper edge; vertex of thorax and metathoracic tuft yellowish; abdomen whitish tinged with brown, the anal tuft yellowish. Fore wing yellowish almost entirely suffused with bright red-brown; subbasal line black, single, dentate; antemedial line single, black with a small spot at costa, erect, waved; claviform absent; orbicular a white point; reniform whitish with a brown line in centre; the medial area with a dark patch on inner margin; postmedial line black, interrupted, defined on outer side by yellowish, bent outwards below costa, excurved to vein 4, then incurved; subterminal line yellowish, excurved below vein 7 and at middle; the veins of terminal area slightly streaked with yellowish; a terminal series of small black lunules; cilia with yellowish points at base. Hind wing white, the veins and terminal area suffused with brown; cilia tinged with ochreous; the under-

side whitish, the costal area irrorated with red-brown, a discoidal point and postmedial line.

Hab. U.S.A., Florida, Cocoanut Grove. *Exp.* 28 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

3201. Oligia scolopacina.

Noctua scolopacina, Esp. Schmett. iv. pl. 130. f. 1 (1788); Hübn. Eur. Schmett., Noct. f. 460; Dup. Lép. Fr. vii. p. 201, pl. 113. f. 3; Frr. Neue Beitr. i. p. 121, pl. 64; Steph. Ill. Brit. Ent., Haust. ii. p. 178; Staud. Cat. Lep. pal. p. 174.
Noctua abbreviata, Haw. Lep. Brit. p. 170 (1809).
Hadena hammoniensis, Sauber, Ver. Naturw. Hamb. x. p. 69 (1899).

Head and thorax ochreous suffused with rufous, a black patch on metathorax; palpi blackish at sides; tarsi ringed with blackish; abdomen grey suffused with brown, a black patch at base and the dorsal crests black. Fore wing ochreous suffused with rufous, the terminal area deep rufous except at apex; subbasal line indistinctly double, dentate, from costa to submedian fold; a diffused oblique black patch above inner margin before the antemedial line which is indistinctly double, diffused, rufous, oblique from costa to median nervure, then waved; claviform absent; orbicular narrow, oblique elliptical, with pale annulus; reniform narrow, constricted at middle, with white annulus forming a small spot on inner side below and with slight blackish spot in lower extremity; a curved rufous medial shade, blackish towards costa; postmedial line dark, indistinctly double towards costa, slightly bent outwards below costa, then dentate and produced to black points on the veins, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line indistinct, pale, defined on inner side by deep rufous, angled outwards at vein 7 and excurved at middle; a terminal series of slight blackish points; cilia fuscous with punctiform ochreous line at base and slight blackish medial line. Hind wing ochreous suffused with brown especially on terminal area; a slight dark discoidal lunule; cilia pale; the underside whitish, the costal area tinged with rufous and irrorated with brown, a black discoidal spot and curved minutely waved postmedial line.

Ab. 1. *hammoniensis*. Suffused with fuscous.

Hab. Britain, Leech Coll.; France; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland, Frey Coll.; N. Italy; S. Sweden; Russia, Livonia, Zeller Coll.; W. Siberia, Altai; E. Siberia, Ussuri; Japan, Yeso (*Whitely*, *Pryer*), 2 ♂, 3 ♀, Tokio (*Maries*), 1 ♂, Yokohama (*Pryer*), 1 ♂. *Exp.* 32–36 millim.

Larva. Meyr. Brit. Lep. p. 132; Barrett, Lep. Brit. iv. p. 378, pl. 181. f. 1. Greenish-grey; dorsal line whitish, dark-edged; subdorsal line dark grey; spiracular line pale yellow edged above by dark grey; head light, brownish ochreous or greenish. Food-plants, Grasses and *Luzula*. 10–6.

3202. *Oligia dinava.

Exyra dinawa, Beth.-Baker, Nov. Zool. xiii. p. 226 (1906).

♀. Head and thorax ochreous tinged with rufous and mixed with some dark-brown scales; frons with lateral black bars; palpi brown except at tips; tarsi dark brown ringed with white; abdomen ochreous-white irrorated with red-brown, the crests dark. Fore wing ochreous tinged with rufous, the apical area suffused with dark brown obliquely from middle of costa to termen at submedian fold; a black point below the cell near base; subbasal line dark, sinuous, interrupted, from costa to inner margin; antemedial line white, defined on each side by some black scales, waved, oblique towards costa and incurved in cell; claviform represented by a few black scales at extremity; orbicular with slight whitish annulus defined on outer side by some black scales, bent outwards at lower extremity; reniform with white annulus except below where it is obscured by some fuscous suffusion extending to postmedial line, defined by black on inner side and with some white suffusion above it; postmedial line double, blackish filled in with whitish, bent outwards below costa, then minutely waved, incurved below vein 4, some white points beyond it on costa; subterminal line ochreous defined on inner side by blackish suffusion from costa to vein 2, then obsolescent, angled outwards at vein 7 and excurved at middle, some black suffusion beyond it at discal fold; a terminal series of small black lunules; cilia chequered ochreous and fuscous and with dark line near base. Hind wing white tinged with brown especially on terminal area, a faint dark discoidal spot and curved postmedial line; some slight dark lunules on termen from apex to vein 2; the underside white, the costal half irrorated with brown, a black discoidal spot, crenulate postmedial line bent inwards to costa and incurved below vein 3, and terminal series of lunules.

Hab. Br. N. Guinea, Dinawa (*Pratt*), type † ♀ in Coll. Bethune-Baker. *Exp.* 22 millim.

3203. Oligia fractilinea. (Plate CXVII. fig. 27.).

Hadena fractilinea, Grote, Can. Ent. vi. p. 15 (1874); Smith, Cat. Noct. N. Am. p. 144.
Hadena vulgivaga, Morr. Proc. Bost. Soc. N. H. xvii. p. 144 (1874).

Head and thorax fuscous mixed with rufous and whitish, tegulæ with blackish line near tips; tarsi blackish ringed with white; abdomen pale brownish ochreous, the dorsal crests black at tips. Fore wing fuscous mixed with reddish, the antemedial area to cell, the medial area to submedian fold, the postmedial area except at costa and the apex whitish tinged with rufous; a diffused blackish streak above base of vein 1; subbasal line dark, waved, from costa to submedian fold; a dark mark above inner margin before the antemedial line which is indistinct, oblique, waved; claviform small, slightly defined by black; orbicular and reniform defined by black, the former indistinct, small, round or oblique elliptical, the latter

with whitish lunule on outer edge; traces of a sinuous medial line oblique from costa to median nervure; postmedial line bent outwards below costa, then minutely waved and with double series of black points beyond it on the veins strongly incurved below vein 4, some pale points beyond it on costa; subterminal line pale defined on inner side by rufous, excurved below vein 7 and at middle; a terminal series of small black lunules. Hind wing ochreous white suffused with brown; a slight dark terminal line; cilia ochreous white with a dark line through them; the underside whitish irrorated with brown, a slight discoidal point and sinuous postmedial line.

Ab. 1. *vulgivaga*. Head and thorax redder with hardly any black; fore wing red mixed with purple-grey and without the whitish areas, the terminal area blackish except at apex.

Hab. Canada, 1 ♀ type, Manitoba, Aweme (*Criddle*), 1 ♀; U.S.A., Vermont, New York (*Grote, Scudder*), 3 ♂, 1 ♀, Wisconsin, Illinois, Nebraska, Colorado, New Mexico. *Exp.* 30–36 millim.

3204. Oligia strigilis.

Noctua strigilis, Clerck, Icones, pl. ix. f. 6 (1759); Linn. Faun. Suec. p. 318 (1761); Esp. Schmett. pl. 146. ff. 1–3; Dup. Lép. Fr. vii. p. 12, pl. 101. f. 2; Steph. Ill. Brit. Ent., Haust. iii. p. 12; Staud. Cat. Lep. pal. p. 164.

Noctua latruncula, Schiff. Wien. Verz. p. 89 (1776); Hübn. Eur. Schmett., Noct. f. 94; Dup. Lép. Fr. vii. p. 9, pl. 101. f. 1; Frr. Neue Beitr. pl. 142. ff. 1–2, & pl. 273. f. 2; Steph. Ill. Brit. Ent., Haust. iii. p. 13.

Noctua præduncula, Schiff. Wien. Verz. p. 89 (1776); Hübn. Eur. Schmett., Noct. f. 95.

Noctua ærata, Esp. Schmett. iv. pl. 146. ff. 4–6 (1790).

Noctua meretricula, Borkh. Eur. Schmett. iv. p. 187 (1792).

Noctua æthiops, Haw. Lep. Brit. p. 215 (1809); Steph. Ill. Brit. Ent., Haust. iii. p. 13.

Miana invisa, Wlk. x. 259 (1856).

Head and thorax dark brown mixed with grey; frons with black lateral bars; tegulæ, thoracic crests, and patagia with some black

Fig. 63.—*Oligia strigilis*, ♂. ½.

scales at tips; tarsi black ringed with white; abdomen pale brown. Fore wing brown mixed with grey and irrorated with black to postmedial line, the inner medial area black-brown, the terminal area white with brown patches on postmedial costal area and on termen at middle and above tornus; subbasal line black, waved, from costa to vein 1, above which there is a black mark

beyond it; some white on inner margin before the antemedial line, which is black defined by white on inner side, waved, angled inwards in cell and on vein 1; claviform defined by diffused black; orbicular and reniform white tinged with brown and defined by black at sides, the former oblique elliptical; postmedial line black defined by white on outer side, bent outwards below costa, then minutely dentate and produced to short black streaks on the veins, excurved to vein 4, then strongly incurved, some white points beyond it on costa; subterminal line white slightly defined by brown on inner side, excurved below vein 7 and at middle, then incurved; a terminal series of small black lunules; cilia whitish with series of blackish spots at tips. Hind wing greyish suffused with brown; cilia white with slight brown line near tips on apical half; the underside white tinged with brown, a slight discoidal spot, sinuous postmedial line, and traces of diffused subterminal line.

Ab. 1. *latruncula*. Paler, generally rufous; fore wing with the white on terminal area much reduced.

Ab. 2. *æthiops*. Almost uniform dark brown; fore wing without any white.

Hab. Britain, Leech Coll; France, Sand and Leech Colls.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland, Zeller and Frey Colls.; Spain, Bilbao; Italy, Courmayeur (*Hampson*); Sicily; Dalmatia; Russia, Livonia, Zeller Coll.; Armenia; Asia Minor, Pontus, Bithynia, Lydia; Kurdistan; N.W. Persia; W. Turkestan, Issyk Kul; E. Turkestan, Ili; hab. ign. type *invisa*. *Exp.* 22–28 millim.

Larva. Meyr. Brit. Lep. p. 137; Barrett, Lep. Brit. v. p. 12, pl. 186. f. 1. Dull reddish or fuscous; dorsal, subdorsal, and lateral lines pale ochreous; subspiracular line pale ochreous, sometimes edged with blackish above; head and thoracic plate pale brown. Food-plants, leaves and stems of Grasses and *Carex*. 9–5.

3205. Oligia instructa. (Plate CXVII. fig. 28.)

Hadena instructa, Wlk. xxxiii. 733 (1865).
Hadena rubrescens, Wlk. xxxiii. 733 (1865).

♂. Head and thorax rufous mixed with dark brown; sides of palpi and frons fuscous; tegulæ with some black at base and strong black medial line; tarsi black ringed with whitish; abdomen ochreous dorsally suffused with fuscous brown. Fore wing pale rufous slightly irrorated with black especially on the veins; subbasal line represented by slight double striæ from costa and cell, with some fuscous suffusion on outer side below the cell; a slight black streak in base of submedian fold; antemedial line indistinctly double, slightly angled outwards below costa, oblique to submedian fold and angled inwards on vein 1; claviform absent; orbicular and reniform small with ochreous annuli defined by black, the former oblique elliptical, the latter constricted at middle; an indistinct diffused medial line, oblique from costa to lower angle of cell, then incurved and approximated to the postmedial line, which is defined by ochreous

on outer side, double at costa, bent outwards below costa, slightly angled inwards at discal fold, strongly incurved and minutely waved below vein 4, some ochreous points beyond it on costa; subterminal line ochreous with slight brown shade on inner side and some slight dark marks beyond it at discal and submedian folds, excurved below vein 7 and at middle; a terminal series of small black lunules; cilia dark brown with fine pale line at base. Hind wing greyish nearly uniformly suffused with brown; cilia whitish with a brown line through them; the underside whitish irrorated with brown, the costal area ochreous thickly irrorated with large black scales, a dark discoidal lunule, curved postmedial line, and slight waved terminal line.

♀. Ochreous and dark brown with hardly a trace of rufous; fore wing with the postmedial area paler, a diffused dark streak in submedian fold between ante- and postmedial lines, the terminal area dark except towards apex.

Hab. Cape Colony, Capetown (*Trimen*), 1 ♂, 1 ♀, type and type *rubrescens*. *Exp.* 32 millim.

3206. **Oligia ambigua.** (Plate CXVII. fig. 29.)

Hadena ambigua, Wlk. xv. 1727 (1858).
Hama exsiccata, Wllgrn. Wien. Ent. Mon. iv. p. 169 (1860).

Head and thorax reddish brown mixed with fuscous and greyish; palpi black, the extremity of 2nd joint white; frons black at sides; tegulæ with black medial line; tarsi black ringed with white; abdomen grey tinged with fuscous, the dorsal crests blackish. Fore wing greyish brown, the medial and terminal areas suffused with fuscous, the postmedial area greyer on inner half; a slight black streak below base of cell; subbasal line double, black filled in with greyish, waved, from costa to submedian fold; antemedial line double, filled in with greyish, oblique, waved; claviform defined by black, acute at extremity and with blackish streak from it to postmedial line; orbicular and reniform defined by black, the former small, round, the latter elliptical, greyish with its centre defined by brown and slight black streaks beyond it; an indistinct diffused medial line oblique from costa to median nervure, then incurved; postmedial line indistinctly double filled in with grey, bent outwards below costa, then dentate and often with white points beyond it on the veins, oblique to vein 5 near subterminal line, then strongly incurved, some whitish points beyond it on costa; subterminal line pale, excurved below vein 7 and at middle and angled inwards at discal fold to near postmedial line; a terminal series of black points with whitish lunules on their inner side; cilia with a fine pale line at base. Hind wing whitish tinged with brown, the terminal area suffused with brown, in female more uniformly suffused with brown; a small dark discoidal spot and sinuous postmedial line; cilia whitish with a dark line through them; the underside white, the costal and terminal areas irrorated with large brown scales, a black discoidal spot and postmedial line crenulate on costal half.

Ab. 1. Fore wing more uniform red-brown without any grey.

Ab. 2. Fore wing with the medial and terminal areas red-brown, the ante- and postmedial areas pale; wedge-shaped blackish marks at veins 5 and 2 from termen to near postmedial line.

Ab. 3. Fore wing more uniformly greyish, with strong black streaks in submedian fold from base and from antemedial line to termen.

Ab. 4. Fore wing with three white points on outer edges of reniform.

Hab. Lagos, Ebute Meta (*Boaq*), 1 ♂; Br. E. Africa, E. Quaso (*Betton*), 2 ♂, Uganda Ry., Mile 478 (*Betton*), 1 ♀, Nairowa (*Betton*), 1 ♂, Ndimu (*Betton*), 1 ♀; Uganda, Ruwenzori, 6000′ (*Wollaston*), 1 ♀; Transvaal, Piet Retief (*Mrs. Mercer*), 1 ♂; Natal, Durban (*Gueinzius*, *Leigh*), 3 ♀ type; Basutoland, Maseru (*Crawshay*), 2 ♂; Cape Colony, Transkei (*Miss F. Barrett*), 1 ♂, 2 ♀. *Exp.* 26–32 millim.

3207. Oligia exhausta. (Plate CXVII. fig. 30.)

Hadena exhausta, Smith, Trans. Am. Ent. Soc. xxix. p. 194 (1903).

♀. Head and thorax brownish grey mixed with some fuscous; palpi black at sides; frons with black bar; tegulæ with blackish medial line; tarsi fuscous with pale rings; abdomen grey tinged with brown, the dorsal crests black at tips. Fore wing grey tinged with brown, the medial area slightly suffused with fuscous; subbasal line indistinctly double, curved, from costa to submedian fold; antemedial line double filled in with whitish, the inner line indistinct, curved, slightly sinuous; claviform minute, defined by black and with blackish streak from it to postmedial line; orbicular placed on the antemedial line, with faint whitish annulus defined by black on outer side, rather oblique elliptical; reniform with whitish annulus defined by black; postmedial line double at costa, bent outwards below costa, then dentate and produced to black points on the veins, excurved and obsolescent to vein 2, angled inwards on vein 1 to near antemedial line, a blackish streak in submedian fold from it to subterminal line and some pale points on fuscous suffusion beyond it on costa; subterminal line indistinct, pale, curved, slightly defined by fuscous on outer side; a fine minutely waved black terminal line; cilia with fuscous lunulate line through them. Hind wing grey suffused with brown; a fine dark terminal line; cilia whitish tinged with brown and with faint dark line through them; the underside white, the costal area slightly irrorated with fuscous, a black discoidal spot, curved postmedial line, and terminal line from apex to vein 2.

Hab. U.S.A., N. Atlantic States, New York, New Windsor, 1 ♀ cotype, Schenectady. *Exp.* 24 millim.

*3208. Oligia una.

Hadena una, Streck. Lep. Rhop. & Het. Suppl. 3, p. 32 (1900); Dyar, Cat. Lep. N. Am. p. 115.

♀. Head and thorax brownish grey mixed with blackish; abdomen grey tinged with brown. Fore wing silky brownish grey; subbasal line black, a dark streak beyond it above inner margin; antemedial line black, somewhat dentate, interrupted at the veins; claviform replaced by a black streak in submedian fold between ante- and postmedial lines; orbicular and reniform indistinct, slightly defined at sides by black; postmedial line bent outwards below costa, excurved to vein 4, then incurved, some black points beyond it on the veins; subterminal line pale defined on outer side by blackish, angled outwards at vein 7 and excurved at middle; a terminal series of black points; cilia brown and black. Hind wing fuscous.

Hab. U.S.A., S. Wisconsin. *Exp.* 28 millim. This species is unknown to me.

3209. Oligia minuscula. (Plate CXVII. fig. 31.)

Orthosia minuscula, Morr. Proc. Bost. Soc. N. H. xvii. p. 147 (1874); Grote, Can. Ent. vii. p. 227, pl. 1. f. 3; Smith, Cat. Noct. N. Am. p. 144.

♀. Head and thorax purplish grey mixed with some dark brown scales; tarsi fuscous ringed with grey; abdomen grey mixed with brown. Fore wing purplish grey irrorated and suffused with red-brown except on terminal area; a rather diffused blackish subbasal line from costa to vein 1; a rather diffused blackish antemedial line oblique from costa to submedian fold, then obsolescent and angled inwards on vein 1; claviform represented by a diffused blackish streak from ante- to postmedial lines; orbicular and reniform small with slight whitish annuli, the former oblique elliptical with black-brown patch on inner edge and some blackish scales on outer, the latter narrow oblong, with black-brown line on inner side and some red on outer; postmedial line blackish, bent outwards below costa, excurved to vein 4, then strongly incurved, slightly defined by white on outer side in submedian interspace, some whitish points beyond it on costa; submedial line only defined by the contrast between the postmedial and terminal areas, angled outwards at vein 7 and incurved below vein 3. Hind wing greyish suffused with brown, the basal area rather paler; cilia white with slight brown line near base; the underside whitish irrorated with brown, a small discoidal spot and traces of a curved postmedial line.

Hab. Canada, 1 ♀; U.S.A., Maine, New Hampshire, Massachusetts. *Exp.* 32 millim.

*3210. Oligia misera. (Plate CXVII. fig. 32.)

Hadena misera, Grote, Bull. Geol. Geog. Surv. Terr. vi. p. 582 (1881); Smith, Cat. Noct. N. Am. p. 144.

Head and thorax dark red-brown mixed with some grey and

ochreous; tegulæ with slight black medial line; the thoracic crests tipped with reddish ochreous; tarsi fuscous with pale rings; abdomen grey-brown. Fore wing dark red-brown tinged with fuscous and slightly irrorated with grey and ochreous; subbasal line ochreous, slightly waved, from costa to vein 1; antemedial line very indistinct, with slight ochreous marks on its inner side in the interspaces, curved; claviform faintly defined by dark brown; orbicular faintly defined by dark brown, oblique elliptical; reniform indistinctly defined by black, with whitish lunule in centre and with slight curved line on it; an indistinct medial line, oblique and slightly waved below the cell; postmedial line indistinct, blackish, defined on outer side by grey towards costa, bent outwards below costa, then produced to slight dark streaks on the veins with grey points at their extremities, incurved below vein 4, some whitish points beyond it on costa; subterminal line formed of small ochreous-white spots, angled outwards at vein 7 and excurved at middle; a terminal series of slight black points; cilia fuscous and greyish, with minute white points at base and slight dark medial line. Hind wing greyish suffused with red-brown and the terminal area with fuscous; a fine dark terminal line; cilia brownish white with a dark line through them; the underside grey irrorated with brown and the costal area tinged with rufous, a small black discoidal spot, rather diffused sinuous postmedial line, and traces of diffused subterminal line.

Hab. U.S.A., New York, Illinois, Wisconsin, Minnesota, in Coll. J. B. Smith. *Exp.* 34 millim.

3211. Oligia arcta.

Hadena arcta, Led. Verh. zool.-bot. Ges. Wien, iii. p. 370, pl. 2. f. 5 (1853); Staud. Cat. Lep. pal. p. 175.
Raphia fasciata, Butl. A. M. N. H. (5) i. p. 193 (1878); id. Ill. Het. B. M. ii. p. 33, pl. 31. f. 5.
Miana parietum, Oberth. Ét. Ent. v. p. 73, pl. 3. f. 15 (1880).

Head, thorax, and abdomen grey, tinged with reddish brown and irrorated with black; palpi blackish at sides; tarsi black with pale rings; abdomen with the dorsal crests black. Fore wing grey tinged with brown and slightly irrorated with fuscous, the antemedial costal area and medial area to reniform much suffused with black with straight outer edge; subbasal line represented by double oblique black striæ from costa; a blackish streak in cell before the orbicular intersecting the antemedial line which is double filled in with whitish, angled outwards below costa, then strongly and obliquely excurved; claviform represented by a slight black streak to postmedial line; orbicular with whitish annulus defined by black, its centre defined by brown, oblique elliptical; reniform with whitish annulus defined on inner side by an oblique black bar; medial line rather diffused, oblique towards costa; postmedial line double at costa, bent outwards below costa, then rather strongly dentate and produced to slight black points on the veins, below vein

4 incurved to below angle of cell, some whitish points with black striæ between them beyond it on costa; subterminal line very indistinct, brownish, angled outwards at vein 7 and inwards in discal fold, then excurved; a terminal series of dark striæ; cilia brownish with a dark line through them. Hind wing grey suffused with fuscous, the terminal area rather darker; a fine dark terminal line; cilia whitish with a slight dark line near base. Underside grey tinged with brown and irrorated with fuscous; fore wing with slight discoidal bar, curved diffused postmedial line, and traces of diffused subterminal line; hind wing with black discoidal lunule, sinuous postmedial line angled inwards in discal fold, and diffused subterminal line.

Ab. 1. Fore wing with the terminal area darker, the markings more distinct.

Hab. W. Siberia, Altai; E. Siberia, Ussuri; Japan, Oiwake (*Pryer*), 1 ♂, 3 ♀, Tokio (*Maries*), 2 ♂, Yokohama (*Jonas*, *Pryer*), 2 ♂, 1 ♀ type *fasciata*; Corea, Gensan (*Ito*, *Leech*), 2 ♂, 1 ♀. *Exp.* 34–40 millim.

3212. Oligia arctides.

Miana arcta, Oberth. Ét. Ent. v. p. 72, pl. 3. f. 14 (1880), nec Led.
Hadena arctides, Staud. Stett. ent. Zeit. 1888, p. 251; id. Cat. Lep. pal. p. 175.

♂. Head, thorax, and abdomen grey mixed with fuscous; palpi blackish at sides; tegulæ with black medial line; tarsi black with pale rings; abdomen with the dorsal crests black. Fore wing grey tinged with brown and irrorated with fuscous, the antemedial costal area and medial area to reniform suffused with blackish, with straight outer edge; subbasal line represented by double oblique black striæ from costa; a slight black streak in cell before the orbicular intersecting the antemedial line, which is double filled in with whitish, angled outwards below costa, then strongly and obliquely excurved; claviform minute, defined by black; orbicular with brownish centre and whitish annulus defined by black, oblique elliptical; reniform with whitish annulus, defined by a black bar on inner side; a diffused black medial line, oblique towards costa; postmedial line with double black spots at costa, bent outwards below costa, then rather strongly dentate to vein 4, then incurved to below angle of cell and defined by whitish on outer side, some white points with black striæ between them beyond it on costa; subterminal line indistinct, pale, defined on inner side by diffused fuscous, angled outwards at vein 7, then somewhat dentate; a terminal series of slight black striæ; cilia grey with a slight dark line through them. Hind wing grey suffused with fuscous, the terminal area rather darker; cilia whitish with a slight dark line through them. Underside grey irrorated with fuscous; fore wing with slight discoidal bar, fine postmedial line excurved from costa to vein 4, then incurved and faint diffused subterminal line; hind

wing with black discoidal lunule, sinuous postmedial line, and faint diffused subterminal line.

Hab. E. Siberia, Amurland, Ussuri, Vladivostock (*Christoph*), 3 ♂; Japan, Tokio (*Maries*), 1 ♂; N. China. *Exp.* 28 millim.

3213. Oligia diversicolora. (Plate CXVIII. fig. 1.)

Demas diversicolor, Morr. Proc. Bost. Soc. N. H. xvii. p. 132 (1874); Smith, Cat. Noct. N. Am. p. 146.

♀. Head and thorax white tinged with brown, the scales of thorax mostly tipped with black or brown; palpi blackish at sides; sides of frons black; pectus black-brown in front; abdomen ochreous white irrorated with brown, the dorsal crests blackish. Fore wing whitish tinged with brown and with slight dark irroration, the medial area suffused with dark brown to the reniform except at costa; a slight black streak below base of cell; subbasal line represented by black striæ from costa and cell; some rufous marks below the cell before the antemedial line, which is double filled in with whitish, angled outwards below costa and strongly excurved from cell to inner margin; claviform defined by black, strongly above; orbicular whitish defined by black except above and with some brown in centre, very oblique elliptical; reniform whitish, very indistinctly defined except on inner side where there is a black bar; an indistinct oblique medial line; postmedial line defined by white on outer side, bent outwards below costa, then dentate and with series of black points beyond it on the veins, excurved to vein 4, then strongly incurved to below inner edge of reniform and outwardly oblique to inner margin; subterminal line white, excurved below vein 7, waved at veins 4, 3 and bent outwards to tornus; a terminal series of slight black lunules; cilia chequered fuscous and ochreous white. Hind wing white irrorated with brown especially on terminal area, a sinuous postmedial line and fine terminal line; cilia white with a slight dark line through them; the underside with dark discoidal lunule and sinuous postmedial line.

Hab. U.S.A., New Hampshire, Massachusetts (*Thaxter*), 1 ♀ type, New York. *Exp.* 34 millim.

3214. Oligia vulnerata.

Miana vulnerata, Butl. A. M. N. H. (5) i. p. 84 (1878); id. Ill. Het. B. M. ii. p. 25, pl. 29. f. 4.
Hadena christophi, Staud. Stett. ent. Zeit. 1888, p. 252.
Hadena doerriesi, Staud. Rom. Mém. vi. p. 446, pl. 8. f. 4 (1892); id. Cat. Lep. pal. p. 165.

Head, thorax, and abdomen brown mixed with grey; tarsi black ringed with white. Fore wing brown mixed with grey, the postmedial area except towards costa and the terminal area paler; subbasal line represented by a black striga from costa; antemedial line formed by raised black scales, excurved, angled inwards in cell, a

black point beyond it above inner margin; orbicular and reniform large, with pale annuli defined by black, both somewhat oblique elliptical; medial line represented by a black striga from costa and rather diffused oblique line from cell to inner margin; postmedial line black, bent outwards below costa, angled inwards at discal fold, strongly incurved below vein 4, and oblique below submedian fold, some white points beyond it on costa and some blood-red suffusion in submedian interspace; subterminal line indistinct, whitish, defined on inner side by a dark shade at costa, excurved below vein 7 and at middle and angled inwards at discal and submedian folds; a terminal series of dark striæ; cilia brown with fine pale lines at base and middle. Hind wing brown somewhat paler at base; cilia whitish with dark line through them; the underside white tinged and irrorated with red-brown, a dark discoidal spot, traces of a sinuous postmedial line and diffused subterminal shade.

Hab. E. Siberia, Amurland, Ussuri; Japan, Tokio (*Maries*), 1 ♀, Yokohama (*Jonas*, *Pryer*), 2 ♂, 3 ♀ type, Fushiki (*Leech*), 1 ♂, Gifu (*Pryer*), 1 ♀; Corea, Gensan (*Leech*), 1 ♂; N. China; C. China, Kiukiang (*Pryer*), 1 ♀, Ichang (*Mrs. Pratt*), 1 ♂. *Exp.* 24–28 millim.

*3215. Oligia leuconephra. (Plate CXVIII. fig. 2.)

Miana leuconephra, Püng. ined.

♀. Head and thorax black-brown mixed with some rufous and grey; tarsi slightly ringed with white; abdomen fuscous with a greyish tinge. Fore wing blackish tinged with grey and suffused with cupreous red-brown; subbasal line blackish, sinuous, from costa to vein 1; antemedial line indistinct, double, excurved in submedian interspace, claviform and orbicular absent; reniform a narrow oblique white lunule defined by black; a faint diffused blackish medial line; postmedial line indistinctly double, slightly bent outwards below costa and incurved below vein 4; subterminal line indistinct, pale, defined by blackish suffusion on inner side, more distinct towards costa, excurved below vein 7 and at middle; a black terminal line; cilia blackish mixed with grey and with a slight black line through them. Hind wing glossy fuscous tinged with grey; cilia with a slight pale line at base.

Hab. E. Siberia, Ussuri, Kasakewitsch, type † ♀ in Coll. Püngeler. *Exp.* 18 millim.

3216. Oligia literosa.

Noctua literosa, Haw. Lep. Brit. p. 213 (1809); Steph. Ill. Brit. Ent., Haust. iii. p. 12, pl. 25. f. 1; Staud. Cat. Lep. pal. p. 164.
Apamea suffuruncula, Ochs. Eur. Schmett. iv. p. 76 (1816); Treit. Eur. Schmett. v. 2, p. 97 (1828); Frr. Neue Beitr. pl. 142. f. 1.
Noctua erratricula, Hübn. Eur. Schmett. Noct. f. 537 (1818).
Apamea onychina, Herr.-Schäff. Neue Schmett. p. 4, ff. 20, 21 (1856).
Hadena subarcta, Staud. Iris, x. p. 283, pl. 9. f. 14 (1897).

Head and thorax deep rufous mixed with some grey and a few

blackish scales; tegulæ with black medial line; tarsi banded with fuscous; abdomen rufous, paler below. Fore wing rufous suffused with grey on antemedial inner area and just beyond middle, some fuscous irroration especially on the veins, the costal and terminal areas suffused with fuscous; subbasal line represented by slight dark striæ from costa and cell; antemedial line represented by a fuscous striga from costa and a strongly excurved black line from cell to inner margin; claviform minute, defined by black; orbicular and reniform grey, the former defined by black, oblique elliptical, the latter defined by black on inner side only; postmedial line almost obsolete on costal half, bent outwards below costa, then with series of black points beyond it on the veins, excurved to vein 4, then bent inwards to origin of vein 2 and forming a black line defined by grey on outer side from cell to inner margin, approximated to the antemedial line, some grey points beyond it on costa; subterminal line indistinct, pale, excurved below vein 7 and at middle; a terminal series of black striæ; cilia with a black line near base. Hind wing greyish tinged with rufous and suffused with brown, especially on terminal area; cilia with a brown line near base and white tips; the underside grey irrorated with brown, the costal area tinged with rufous, the terminal area suffused with brown, traces of a discoidal point and curved postmedial line.

Ab. 1. *subarcta*. Larger; fore wing not tinged with rufous.—Sicily, Palestine, Ala Tau.

Ab. 2. *onychina*. Much paler; fore wing grey-white, the markings obsolescent.—Heligoland and islands in North Sea.

Hab. Britain, Forres (*Salvage*), England, Leech Coll.; Ireland, Derry (*Salvage*); France; Islands in North Sea, Frey Coll.; Germany, Zeller, Frey & Leech Colls.; Austria; Hungary; Switzerland, Frey Coll.; Dalmatia; Sweden; S. Russia; Armenia; Syria, Leech Coll.; W. Siberia, Altai; W. Turkestan, Issyk Kul, Ala Tau. *Exp.* 26–32 millim.

Larva. Meyr. Brit. Lep. p. 136; Barrett, Lep. Brit. v. p. 8, pl. 185. f. 2.

Ochreous sometimes tinged with pink, area between dorsal and subdorsal lines deep reddish or fuscous; head and thoracic plate yellow-brown. Food-plants: stems of Grasses. 9–6.

3217. Oligia semicana. (Plate CXVIII. fig. 3.)

Miana semicana, Wlk. xxxii. 675 (1865); Smith, Cat. Noct. N. Am. p. 144.
Erastria latireptana, Wlk. xxxiii. 791 (1865).
Hadena hausta, Grote, Can. Ent. xiv. p. 217 (1882); Smith, Cat. Noct. N. Am. p. 146.

♂. Head and thorax pale reddish brown mixed with whitish; tegulæ with slight dark line near tips; abdomen grey slightly tinged with fuscous, the dorsal crests blackish, the anal tuft ochreous. Fore wing deep brown to the reniform, the postmedial area pale grey, the terminal area tinged with rufous; subbasal line represented by a slight striga from costa; antemedial line indistinctly double and somewhat waved and oblique, a diffused black

streak from it to postmedial line in submedian fold replacing the claviform; orbicular and reniform whitish slightly defined by brown and with some brown in centres, the former oblique elliptical; postmedial line indistinctly double, filled in with white below vein 2, bent outwards below costa, excurved to vein 4, then strongly incurved, some pale points beyond it on costa; subterminal line indistinct, pale, defined by brown on inner side, excurved below vein 7 and at middle; a terminal series of small black lunules; cilia grey and brown. Hind wing whitish tinged with fuscous especially on terminal area, a fine dark terminal line; cilia ochreous white with a dark line through them; the underside ochreous white slightly irrorated with brown, a dark discoidal spot and curved postmedial line.

Hab. U.S.A., 2 ♂ type and type *latireptana*, Maine, Kittery Point, New York, Pennsylvania, New Brighton (*H. D. Merrick*), 1 ♂, New Mexico. *Exp.* 22 millim.

3218. **Oligia subjuncta.** (Plate CXVIII. fig. 4.)

Hadenella subjuncta, Smith, Can. Ent. xxx. p. 323 (1898); Dyar, Cat. Lep. N. Am. p. 108.

Head and thorax grey mixed with rufous and fuscous; frons with lateral black bars; tegulæ with black medial line; tarsi fuscous with pale rings; abdomen grey tinged with ochreous, the dorsal crests fuscous. Fore wing grey irrorated with fuscous and black and with a rufous tinge below base of cell and on medial area from subcostal nervure to submedian fold; a slight black streak above base of vein 1; subbasal line represented by double black striæ from costa; a slight black mark above inner margin before the antemedial line, which is double, filled in with white below submedian fold, oblique to submedian fold, then excurved; claviform absent; medial area with slight black streak in submedian fold and white streak on vein 1; orbicular and reniform rather small, pale slightly defined by fuscous and their centres tinged with fuscous, the former somewhat oblique elliptical; a faint medial line oblique from costa to median nervure, then incurved; postmedial line defined by grey on outer side and below vein 2 by white, bent outwards below costa, excurved to vein 5, then strongly incurved, some white points beyond it on costa; the veins of postmedial and terminal areas with dark streaks; subterminal line pale defined by brown on inner side, excurved below vein 7 and at middle; a terminal black line; cilia fuscous intersected with greyish. Hind wing grey suffused with pale fuscous brown, the veins and a terminal line darker; cilia pale with a diffused fuscous line near base; the underside whitish irrorated with fuscous, a slight discoidal spot and curved postmedial line.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), 3 ♂, 2 ♀; U.S.A., Massachusetts, 1 ♂. *Exp.* 24–28 millim.

3219. Oligia tonsa. (Plate CXVIII. fig. 5.)

Hadena tonsa, Grote, Can. Ent. xii. p. 214 (1880); Smith, Cat. Noct. N. Am. p. 143.

♀. Head and thorax grey mixed with black; frons with black bar; tegulæ with black medial line; pectus and legs white irrorated with black; tarsi black ringed with white; abdomen grey irrorated with black, the dorsal crests darker. Fore wing grey thickly irrorated with black; subbasal line represented by double black striæ from costa; antemedial line double filled in with grey, oblique from costa to median nervure, then excurved and retracted to inner margin; claviform defined by black, acute at extremity and with black streak from it to postmedial line; orbicular and reniform with grey centres defined by fuscous and whitish annuli defined by black, the former oblique elliptical, the latter with its lower extremity rather produced; a strong black medial shade; postmedial line double filled in with grey, slightly bent outwards below costa, then minutely waved, strongly incurved below vein 4 to lower edge of reniform and oblique to inner margin, some grey points beyond it on costa; subterminal line grey defined by fuscous on inner side, excurved below vein 7 and at middle, the area beyond it rather darker; a waved black terminal line; cilia grey irrorated with black, a fine whitish line at base. Hind wing greyish suffused with fuscous brown especially towards termen; cilia whitish with a dark line near base; the underside grey irrorated with brown, a dark discoidal spot, curved postmedial line, and diffused terminal band.

Hab. U.S.A., Nevada, 1 ♀ type, Arizona, Prescott (*Kunze*), 1 ♀. *Exp.* 24 millim.

3220. Oligia lævigata. (Plate CXVIII. fig. 6.)

Hadenella lævigata, Smith, Can. Ent. xxx. p. 321 (1898); Dyar, Cat. Lep. N. Am. p. 108.

♀. Head and thorax grey mixed with dark brown; tarsi brown ringed with white; abdomen grey irrorated with brown. Fore wing fuscous brown mixed with grey; the postmedial area grey-white except towards costa, the apex grey-white; subbasal line absent; antemedial line very indistinct, oblique from costa to submedian fold; claviform absent; orbicular hardly traceable; reniform grey-white slightly defined by blackish and its centre by brown; postmedial line double filled in with whitish, bent outwards below costa, excurved to vein 4, then strongly incurved to below inner edge of reniform and oblique to inner margin; the whitish postmedial area with dark streaks on the veins and some whitish points on costa; subterminal line whitish defined by brown on inner side, excurved below vein 7 and at middle and angled inwards at discal and submedian folds, the area beyond it dark except at apex; cilia brown with fine whitish line at base. Hind wing whitish suffused

and irrorated with brown especially on terminal area; cilia whitish with a brown line through them; the underside whitish irrorated with brown, a slight discoidal point and traces of curved postmedial line.

Hab. U.S.A., Colorado, Glenwood Springs (*Barnes*), 1 ♀, Garfield Co., California, Mt. Shasta (*Walsingham*), 1 ♀. *Exp.* 24 millim.

3221. Oligia furuncula.

Noctua furuncula, Schiff. Wien. Verz. p. 89 (1776); Hübn. Eur. Schmett., Noct. f. 545; Dup. Lép. Fr. vii. p. 9, pl. 101. f. 3; Herr.-Schäff. Neue Schmett. p. 4, ff. 19, 22. 23.
Noctua bicoloria, Vill. Linn. Ent. ii. p. 288 (1789); Staud. Cat. Lep. pal. p. 165.
Noctua vinctuncula, Hübn. Eur. Schmett., Noct. f. 96 (1802).
Noctua humeralis, Haw. Lep. Brit. p. 215 (1809); Steph. Ill. Brit. Ent., Haust. iii. p. 14.
Noctua terminalis, Haw. Lep. Brit. p. 215 (1809); Steph. Ill. Brit. Ent., Haust. iii. p. 14.
Noctua rufuncula, Haw. Lep. Brit. p. 216 (1809); Steph. Ill. Brit. Ent., Haust. iii. p. 14.
Noctua erratricula, Frr. Neue Schmett. pl. 142. f. 3 (nec Hübn.).
Apamea suffuruncula, Boisd. Gen. et Ind. Meth. p. 116 (1840).
Miana insulicola, Staud. Cat. Lep. Eur. p. 103 (1871).
Hadena pallidior, Staud. Stett. ent. Zeit. 1882, p. 42.
Miana semicretacea, Alph. Rom. Mém. ix. p. 29 (1897).

Head and thorax reddish brown mixed with grey; palpi brown at sides; frons with lateral black bars; patagia and thoracic crests with some blackish scales at tips; abdomen grey suffused with brown, the dorsal crests blackish, the anal tuft dark above. Fore wing with the basal half red-brown, the terminal half greyish tinged with rufous, the terminal area with brownish patches at middle and above tornus; subbasal line represented by two slight brown striæ from costa; antemedial line very indistinct, oblique from costa to below cell, then excurved; claviform faintly defined by brown at extremity; orbicular greyish slightly defined by brown, somewhat oblique elliptical; reniform grey very faintly defined by brown; postmedial line indistinct, brown slightly defined by whitish on outer side especially below vein 3, bent outwards below costa, then produced to slight dark streaks on the veins, excurved to vein 4, then strongly incurved, some pale points beyond it on costa; subterminal line very indistinct, slightly defined by rufous on inner side, excurved below vein 7 and at middle, then incurved; a terminal series of black striæ; cilia greyish and dark brown with blackish medial line. Hind wing greyish suffused with brown, the terminal area rather darker; cilia whitish with a brown line through them; the underside whitish tinged with brown and the costal area with rufous, a slight discoidal spot and traces of a curved postmedial line.

Ab. 1. *bicoloria*. Fore wing with the basal half dark brown, the terminal half whitish except terminal area.

Ab. 2. *rufuncula*. Fore wing nearly uniform pale rufous.

Ab. 3. *vinctuncula*. Fore wing rufous with the terminal area dark brown, a narrow black medial band.

Ab. 4. *insulicola*. Fore wing greyish with white and black striæ.—Heligoland, Norderney, Denmark.

Ab. 5. *pallidior*. Paler; fore wing with the basal half rufous, the terminal half whitish; hind wing white, the termen tinged with ochreous.—W. & E. Turkestan, Tibet.

Hab. Britain, Leech Coll.; France, Sand Coll.; Heligoland, Leech Coll.; Denmark, Frey Coll.; Germany, Zeller, Frey and Leech Colls.; Austria; Hungary; Switzerland; Spain, Andalusia; N. Italy; Scandinavia; Russia, Livonia, Zeller Coll.; Armenia; W. Siberia, Altai; W. Turkestan, 1 ♂, Ferghana, Syr Daria, 1 ♂, Issyk Kul, Ala Tau; E. Turkestan, Ili; Tibet, Kukunoor; E. Siberia, Ussuri. *Exp.* 22–30 millim.

Larva. Meyr. Lep. Brit. p. 136; Barrett, Brit. Lep. v. p. 20, pl. 187.

Ochreous yellow tinged with pinkish and with three dull reddish bands on each somite; dorsal and subbasal lines paler; head dark reddish brown, thoracic plate pale reddish brown. Food-plants: stems of Grasses. 9–6.

3222. Oligia captiuncula.

Apamea captiuncula, Treit. Schmett. Eur. v. 2. p. 96 (1825); Dup. Lép. Fr. vii. p. 282, pl. 117. f. 7; Herr.-Schäff. Eur. Schmett., Noct. ff. 173–4; Staud. Cat. Lep. pal. p. 165.
Miana expolita, Sttn. Entom. Ann. 1855, p. 41.
Noctua unica, Frr. Neue Beitr. vii. pl. 640. f. 1 (1858).
Miana tincta, Kane, Entom. 1895, p. 155.

Head and thorax dark brown mixed with greyish; tarsi dark brown with pale rings; abdomen grey-brown with slight grey segmental lines, the dorsal crests black. Fore wing dark brown mixed with grey, the medial area darker, the postmedial area grey shading to rufous at costa and before subterminal line; subbasal line represented by a slight striga from costa; antemedial line defined by whitish on inner side, waved; claviform absent; orbicular and reniform greyish with white annuli, the former minute, elongate elliptical, the latter small, narrow; traces of a blackish medial shade; postmedial line defined by white on outer side and with whitish patch beyond it on inner area, slightly bent outwards below costa, excurved to vein 4, then strongly incurved, some white points beyond it on costa; subterminal line indistinct, pale, defined on inner side by rufous, excurved below vein 7 and at middle; terminal area darker; a slight dark terminal line; cilia greyish with a dark line near base. Hind wing dark brown tinged with greyish; cilia grey with a fuscous line near base; the underside grey irrorated and suffused with fuscous, a slight dark discoidal spot and curved postmedial line.

Ab. 1. Fore wing with the postmedial area rufous without white beyond the postmedial line.

Ab. 2. Fore wing with the ante- and postmedial areas largely suffused with white.

Ab. 3. *expolita*. Fore wing almost uniform greyish brown.—Britain, Armenia.

Ab. 4. *tincta*. Fore wing with the basal area grey, the medial area deep pink, the terminal area pale glossy pink.—Ireland.

Hab. Britain, Leech Coll.; France, Pyrenees; Germany, Silesia, Bavaria; Austria, Frey & Leech Colls., Galicia, Styria, Zeller Coll.; Switzerland, Frey Coll.; Sweden; Finland; Russia, Livonia, Urals; Armenia; W. Siberia, Altai; E. Siberia, Dahuria, Ussuri. *Exp.* 18–22 millim.

Larva. Meyr. Brit. Lep. p. 136; Barrett, Lep. Brit. v. p. 24, pl. 188. f. 1. Ochreous tinged with reddish, dorsally tinged with purplish on somites 2–7; head reddish-brown; thoracic plate yellow-brown. Food-plant: hearts of *Carex glauca*. 8–5.

3223. Oligia havorthi.

Apamea haworthii, Curt. Brit. Ent. v. p. 260 (1829); Steph. Ill. Brit. Ent., Haust. iii. p. 16, pl. 23. f. 3; Graslin, Ann. Soc. Ent. Fr. 1848, p. 58, pl. 1. ff. 3–6; Herr.-Schäff. Eur. Schmett., Noct. ff. 467–8; Staud. Cat. Lep. pal. p. 169.
Apamea tripuncta, Curt. Brit. Ent. v. p. 260 (1829).
Celæna hibernica, Steph. Ill. Brit. Ent., Haust. iii. p. 17 (1829).
Celæna lancea, Steph. Ill. Brit. Ent., Haust. iii. p. 18 (1829).
Noctua erupta, Germar, Faun. Ins. Eur. xxii. pl. 15 (1842); Frr. Neue Beitr. pl. 472. ff. 1, 2.
Gortyna morio, Ev. Bull. Mosc. 1842, iii. p. 550; Frr. Neue Beitr. pl. 388. f. 1.

Head and thorax deep purplish red-brown; frons with slight dark lateral bars; tegulæ with slight dark medial line; tarsi fuscous ringed with whitish; abdomen brown with the anal tuft rufous. Fore wing deep purplish red-brown to black-brown, irrorated and the veins streaked with white, especially the median nervure and bases of veins 4, 3 on medial area; subbasal line double filled in with whitish, waved, from costa to submedian fold; antemedial line double filled in with whitish, angled outwards below costa, then oblique, waved; claviform small, defined by black; orbicular and reniform small with white annuli or often filled in with white, defined by black, the former round, rarely wedge-shaped, the latter angled inwards on median nervure; an indistinct waved medial line oblique from costa to median nervure; postmedial line double filled in with white, slightly bent outwards below costa, somewhat angled inwards below vein 7, excurved to vein 4, then oblique; the postmedial area irrorated or suffused with white and with some white points on costa; subterminal line white defined on inner side by a blackish patch at costa and by small dentate dark marks from below vein 6 to inner margin, slightly angled outwards at veins 7, 4, 3; a terminal series of small black lunules; cilia red-brown and greyish with a brown line through them. Hind wing reddish brown with the terminal area darker; cilia yellowish white with a brown line near base; the underside paler, the costal and terminal

areas irrorated with brown, a small discoidal spot, postmedial line excurved to vein 2, then incurved and fine terminal line.

Ab. 1. *hibernica*. Redder; fore wing with the markings less clearly defined by white.

Hab. BRITAIN, Leech Coll.; FRANCE; GERMANY, Zeller, Frey & Leech Colls.; SCANDINAVIA; RUSSIA, Riga, Zeller Coll., Livonia, Zeller Coll., Urals. *Exp.* 26–32 millim.

Larva. Meyr. Brit. Lep. p. 135; Barrett, Lep. Brit. v. p. 3, pl. 185. f. 1.

Pinkish ochreous to purplish brown; dorsal and subdorsal lines faint, pale; spots black; head and thoracic plate pale reddish brown. Food-plant: bases of stems of *Eriophorum*. 6–7.

*3224. **Oligia obtusa.** (Plate CXVIII. fig. 7.)

Helotropha obtusa, Smith, J. N.Y. Ent. Soc. x. p. 45 (1902); Dyar, Cat. Lep. N. Am. p. 123.

Head and thorax fuscous brown; antennæ whitish above, reddish below; tegulæ at tips and thoracic crests somewhat paler; abdomen grey-brown. Fore wing fuscous brown, the medial area darker, black below the cell; subbasal line slight, black defined on inner side by pale scales; antemedial line double, oblique, slightly angled outwards below costa and at vein 1; claviform short, broad, defined by black; orbicular small, oblique elliptical, defined by pale scales; reniform with pale annulus, expanding and undefined below; median nervure and the veins arising from it streaked with white on medial area; postmedial line double, bent outwards below costa and oblique below vein 4 to inner margin near antemedial line, some white points beyond it on costa; subterminal line slight, formed of whitish scales slightly defined on inner and outer sides by dark shadings, excurved below vein 7 and at middle; the apex irrorated with grey; a terminal series of small black lunules; cilia with a fine yellowish line at base and intersected with yellowish. Hind wing fuscous brown; a slight discoidal lunule and postmedial line; the underside paler thickly irrorated with fuscous, a large discoidal lunule and sometimes a postmedial line.

Hab. U.S.A., New Hampshire, Claremont, Ashleys Ferry. *Exp.* 30–34 millim. This species is unknown to me, figured from a drawing from type in Coll. J. B. Smith.

3225. **Oligia includens.** (Plate CXVIII. fig. 8.)

Hydrelia includens, Wlk. xii. p. 813 (1857); Smith, Cat. Noct. N. Am. p. 312.
Hadena norma, Morr. Can. Ent. vii. p. 216 (1875).
Lithacodia penita, Morr. Proc. Ac. Nat. Sci. Phil. 1875, p. 71.
Eustrotia mariæ, Grote, Can. Ent. ix. p. 67 (1877).

Head and thorax rufous mixed with ochreous; abdomen ochreous white slightly tinged with rufous and with the dorsal crests rufous.

Fore wing ochreous suffused with rufous, the inner antemedial area and an oblique postmedial band from apex to inner margin paler ochreous; subbasal line represented by a slight oblique striga from costa; an oblique subbasal band of blackish scales from submedian fold to inner margin; antemedial line slight, nearly erect from costa to median nervure, angled outwards in submedian fold and oblique to inner margin; orbicular absent; reniform represented by an oblique white lunule on a diffused dark patch; postmedial line slight, faintly defined by ochreous on outer side towards costa, bent outwards below costa, then produced to slight streaks on the veins and defined by the pale band, excurved to vein 4, then incurved; some minute pale points on postmedial part of costa and a dark rufous patch before the oblique band which is bounded on outer side by the oblique somewhat diffused subterminal line which is very slightly excurved below vein 7 and at middle; a fine dark terminal line. Hind wing pale ochreous slightly tinged with brown; a fine dark terminal line; the underside irrorated with red-brown, a somewhat diffused curved postmedial line.

Ab. 1. Fore wing with the white discoidal lunule almost entirely suffused with black.

Hab. Canada, Nova Scotia (*Redman*), 1 ♀ type; U.S.A., Eastern and Middle States, New York, Evans Center (*Grote*), 2 ♂, 1 ♀ type *mariæ*. *Exp.* 22–26 millim.

*3226. Oligia nyctichroa. (Plate CXVIII. fig. 9.)

Oligia nyctichroa, D. Jones, Trans. Ent. Soc. 1908, p. 159.

♂. Head and thorax fuscous brown; pectus and legs pale greyish brown, the tarsi fuscous brown with pale rings; abdomen reddish brown tinged with fuscous. Fore wing dark reddish brown, suffused with black on antemedial area, outer half of medial area and terminal area; an indistinct pale waved subbasal line from costa to submedian fold; antemedial line double, waved, erect; orbicular and reniform small, greyish defined by black, the former indistinct, elliptical, the latter defined at sides only; a nearly straight blackish medial line; postmedial line defined by minute whitish marks on each side from costa to vein 6, then double and filled in with greyish, strongly bent outwards below costa, then minutely waved, incurved below vein 4, some white points beyond it on costa; the terminal area with diffused blackish streaks in the interspaces; a terminal series of black points with minute pale striæ on their inner side. Hind wing fuscous brown; a whitish point at tornus with blackish above and below it; cilia whitish at submedian interspace; the underside paler suffused with brown, traces of a curved diffused postmedial line.

Hab. Brazil, Paraña, R. Paranapanema, type † in Coll. D. Jones. *Exp.* 24 millim.

Genus **AGROPERINA**, nov.

Type, *A. lateritia*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and fringed with hair in front, the 3rd short, porrect; frons smooth; eyes large, rounded; antennæ of male ciliated; head and thorax clothed with hair and hair-like scales, the latter with indistinctly double ridge-like dorsal crest; tibiæ moderately fringed with hair; abdomen with dorsal crests on basal segments, some rough hair at base and lateral fringes of hair. Fore wing rather narrow, the apex rectangular, the termen obliquely curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with small white lunule on outer edge of reniform.
  a. Fore wing with white lunule in centre of reniform.
    a^1. Fore wing purplish red-brown suffused with black-brown ..... *dubitans*.
    b^1. Fore wing purplish red-brown not suffused with black-brown ..... *cogitata*.
  b. Fore wing without white lunule in centre of reniform ..... *lateritia*.
B. Fore wing without small white lunule on outer edge of reniform.
  a. Fore wing fuscous black ..... *illustra*.
  b. Fore wing dark red-brown with two white points at lower extremity of reniform ..... *fervida*.
  c. Fore wing not dark red-brown and without white points at lower extremity of reniform.
    a^1. Fore wing with the postmedial area paler than the ground-colour except towards costa ..... *conradi*.
    b^1. Fore wing with the postmedial area concolorous.
      a^2. Fore wing with the lines distinct, blackish.
        a^3. Fore wing grey-white irrorated with rufous ..... *lutosa*.
        b^3. Fore wing fulvous yellow tinged with rufous ..... *helva*.
        c^3. Fore wing bright rufous ..... *inficita*.
      b^2. Fore wing with the lines pale, obsolescent ..... *morna*.

3227. **Agroperina dubitans.** (Plate CXVIII. fig. 10.)

Mamestra dubitans, Wlk. ix. 232 (1856); Smith, Cat. Noct. N. Am. p. 135.
Apamea insignata, Wlk. xi. 729 (1857).
Hadena sputator, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 190 (1873).
Hadena sputatrix, Grote, Check List Noct. p. 9 (1875).
Hadena amanda, Swinh. A. M. N. H. (7) vii. p. 494 (1901).

Head and thorax black-brown tinged with purple and mixed with some grey hairs; pectus with ochreous and brown hair; tarsi black ringed with white; abdomen dark brown mixed with grey, the anal tuft tinged with rufous. Fore wing black-brown tinged with purple and sparsely irrorated with white; subbasal line represented by dark striæ from costa and cell; antemedial line indistinct, oblique, waved; claviform minute, faintly defined by black; orbicular small with slight grey annulus defined by black, oblique elliptical or elongate; reniform with ochreous-white lunule in centre and incomplete whitish annulus; an indistinct waved

medial line oblique from costa to below cell; postmedial line slightly defined by grey on outer side, bent outwards below costa, then minutely dentate and produced to black and white points on the veins, oblique below vein 4, some white points beyond it on costa; subterminal line formed of white striæ defined on inner side by slight dentate black marks, excurved below vein 7 and at middle; cilia with a series of white points at base. Hind wing greyish suffused with fuscous brown, the veins and terminal area rather darker; a fine dark terminal line; cilia ochreous white with a dark line through them: the underside ochreous whitish, the costal and terminal areas thickly irrorated with fuscous, the costal area tinged with purple, a dark discoidal lunule and sinuous postmedial line.

Hab. CANADA, 1 ♂, 1 ♀, Renfrew Co., 2 ♂, Toronto (*Prout*), 1 ♂, Ottawa (*Gibson*, *Fletcher*, *Young*, *Saunders*), 6 ♂, 3 ♀, London (*Saunders*), 1 ♂, 1 ♀, Nova Scotia (*Redman*), 1 ♀. U.S.A., Eastern, Northern, Middle and Central States (*Doubleday*), 3 ♂, 1 ♀, type and type *insignata*, Massachusetts (*Burg*), 1 ♀, New York, Evans Center (*Grote*), 1 ♂, 1 ♀ type *sputator*, Pennsylvania, New Brighton (*Merrick*), 1 ♀, Ohio, 1 ♀. ??PERAK, 1 ♂ type *amanda*. *Exp.* 44–48 millim.

3228. Agroperina cogitata. (Plate CXVIII. fig. 11.)

Apamea insignata, Wlk. Can. Nat. & Geol. v. p. 254 (1860), nec Wlk. 1857.

Xylophasia cogitata, Smith, Proc. U.S. Nat. Mus. xiii. p. 421 (1890); id. Cat. Noct. N. Am. p. 135.

Head and thorax deep purplish red with a few white hairs; palpi with some fuscous hairs; tarsi fuscous ringed with white; abdomen pale or bright rufous, greyish at base, the crests rufous. Fore wing deep purplish rufous, the veins blackish irrorated with white scales; subbasal line represented by a whitish striga from costa; antemedial line indistinct, slightly defined by whitish on inner side, oblique from costa to submedian fold, then angled inwards on vein 1; claviform minute, slightly defined by brown and with a few white scales in centre; orbicular small with fuscous centre and incomplete white annulus defined by brown, oblique elliptical; reniform with dark centre with white lunule on it and incomplete white annulus; an indistinct medial shade angled on median nervure; postmedial line defined by grey on outer side, slightly bent outwards below costa, then with series of black and white points beyond it on the veins, excurved to vein 4, then oblique; subterminal line white slightly defined by brown on inner side; angled outwards at vein 7 and dentate at veins 4, 3; a fine dark terminal line interrupted by white points at the veins; cilia with a fine white line at base. Hind wing greyish suffused with fuscous brown, the veins and terminal area darker, the termen sometimes tinged with rufous towards tornus; cilia rufous; the underside ochreous white, the costal area tinged with purplish red

and irrorated with brown, a slight dark discoidal lunule, sinuous postmedial line, and terminal series of striæ.

Hab. CANADA, Hudson's Bay (*Barnston*), 1 ♀, Alberta, Calgary (*Wolley-Dod*), 1 ♂, Br. Columbia, Kaslo (*Cockle*), 2 ♂, 2 ♀ (*J. H. Keen*), 1 ♀, Sicamons (*Ricardo*), 1 ♀, Revelstoke (*Mrs. Nicholl*), 1 ♀, Vancouver (*Bush*), 1 ♂, 1 ♀, Wellington (*Taylor*), 1 ♀; U.S.A., New Hampshire, Washington 2 ♀, Colorado, Manitou, California, Sierra Nevada (*Walsingham*), 1 ♂, 1 ♀. *Exp.* 42–50 millim.

3229. Agroperina lateritia.

Phalæna lateritia, Hüfn. Berl. Mag. iii. p. 306 (1767); Esp. Schmett. iv. pl. 131. ff. 3–4; Dup. Lép. Fr. vii. p. 208, pl. 113. f. 5; Frr. Neue Beitr. i. pl. 65; Smith, Cat. Noct. N. Am. p. 134; Staud. Cat. Lep. pal. p. 173.
Noctua molochina, Hübn. Eur. Schmett., Noct. f. 74 (1802).
Mamestra obliviosa, Wlk. xv. 1683 (1858).
Hadena expallescens, Staud. Stett. ent. Zeit. 1882, p. 41.
Hadena satina, Streck, Lep. Rhop. & Het., Suppl. i. p. 8 (1898); Dyar, Cat. Lep. N. Am. p. 115.
Hadena borealis, Strand. Arch. Naturv. Christian. xxv. 9, p. 13 (1903).

Head and thorax dark purplish red; palpi and frons at sides dark brown; pectus with the hair pale; tarsi dark brown ringed with whitish; abdomen ochreous or reddish brown, greyish at base. Fore wing purplish red-brown with slight dark irroration, the costal area rather browner, the veins irrorated with some white scales; subbasal line indistinct, waved, from costa to submedian fold; antemedial line double at costa, oblique to submedian fold,

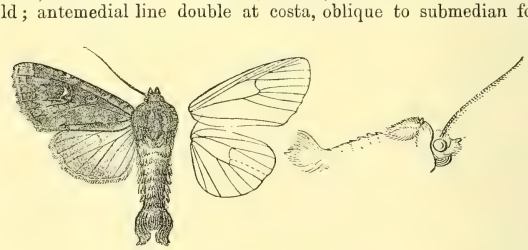


Fig. 64.—*Agroperina lateritia*, ♂. ½.

angled inwards to a dark point on vein 1 and bent inwards to inner margin; claviform absent; orbicular and reniform narrow with dark brown centres and incomplete white annuli, the former oblique elliptical; a dark medial shade, oblique from costa to vein 2, then incurved; postmedial line double and filled in with whitish at costa, bent outwards below costa, then dentate and produced to black and white points on the veins, excurved to vein 4, then oblique, some white points beyond it on costa; subterminal line

indistinct, pale, slightly defined by brown on inner side, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of small black lunules. Hind wing pale suffused with ochreous brown, the veins and terminal area darker; cilia ochreous; the underside ochreous white, the costal and terminal areas tinged with purplish and irrorated with brown, a dark discoidal point and curved post-medial line with minute dark streaks on the veins.

Ab. 1. *borealis*. Darker and browner.—Lapland.

Ab. 2. Pale purplish red.

Ab. 3. *expallescens*. Fore wing ochreous suffused with pale red except on inner and postmedial areas, the terminal area tinged with brown.—W. & E. Turkestan, Tibet.

Hab. Canada (*Norman*), 1 ♀, Ottawa (*Fletcher*, *Young*), 2 ♂, Nova Scotia (*Redman*), 1 ♀, Anticosti, Manitoba, Aweme (*Criddle*), 1 ♂, Alberta, Calgary (*Wolley-Dod*), 2 ♂, 1 ♀, Red Deer R. (*Wolley-Dod*), 1 ♀, Olds (*Willing*), 1 ♂, 2 ♀, Saskatchewan (*Fletcher*), 1 ♂, Rocky Mts. (*Ld. Derby*), 2 ♀, type *obliviosa*, Vancouver I., 1 ♀; U.S.A., Massachusetts, Beverly (*Burg*), 1 ♂, 3 ♀, New York (*Packard*, *Speyer*), 3 ♂, 1 ♀, Colorado, 1 ♂; France, Sand Coll.; Denmark, Leech Coll.; Germany, Zeller and Leech Colls.; Austria; Hungary; Switzerland Frey Coll., Zermatt (*A. H. Jones*), Engadine, Frey Coll.; N. Italy; Scandinavia; Lapland; Finland, Zeller Coll.; Russia, Livonia, Zeller Coll.; Balcans; Armenia; W. Turkestan, Turcomania, 1 ♂, 1 ♀, Ferghana, Ala Tau, Issyk Kul, Sarawschan; E. Turkestan, Ili; Tibet, Amdo, Gyangtse (*Walton*), 1 ♂, 5 ♀; Mongolia, Urga; E. Siberia, Amurland, Ussuri; Japan (*Lewis*), 1 ♀; Kashmir, Dras (*Leech*), 1 ♂, Goorais Valley (*Leech*), 1 ♀, Nubra (*McArthur*), 2 ♀. *Exp.* 46–54 millim.

Larva. Kirby, Butt. Moths Eur. p. 240; Hffm. Raup. p. 97, pl. 27. f. 14.

Dark grey with the thoracic and anal plates black; head brown. Food-plants, Grasses. 4.

*3230. ? Agroperina illustra. (Plate CXXIV. fig. 1.)

Xylophasia illustra, Smith, Ann. N.Y. Ac. Sci. xviii. p. 114 (1908).

♂. Head and thorax fuscous black; abdomen grey irrorated with fuscous. Fore wing dull fuscous black and without markings except the reniform, which is indicated by some pale scales and a slight subterminal line formed of whitish scales defined on inner side by some velvety black scales and very faintly angled outwards at veins 4, 3; cilia with a slight yellowish line at base, somewhat punctiform at the veins. Hind wing grey tinged with ochreous; cilia paler with a dark line at base; the underside whitish irrorated with brown, a brown discoidal spot.

Hab. Canada, Alberta, High R. *Exp.* 28 millim. This species is unknown to me; figured from a drawing from type in Coll. J. B. Smith.

*3231. Agroperina fervida, n. sp. (Plate CXVIII. fig. 12.)

Hypernæmia violacea, Staud. Cat. Lep. pal. p. 200 (nec Butl.).

♂. Head, thorax, and abdomen dark red-brown slightly mixed with grey; palpi whitish at tips; antennæ with the basal joint whitish in front; tarsi ringed with ochreous. Fore wing dark red-brown slightly mixed with grey; traces of a waved subbasal line from costa to submedian fold; antemedial line very indistinct, dark, oblique from costa to submedian fold, then angled inwards on vein 1; claviform faintly defined by black; orbicular and reniform with slight whitish annuli faintly defined by blackish, the former oblique elliptical, the latter with slight white point on inner side below and two at outer side; postmedial line indistinct, blackish, defined on outer side by pale olive, bent outwards below costa, then minutely dentate, oblique below vein 5, some white points beyond it on costa; subterminal line pale olive, excurved below vein 7 and at middle; a terminal series of slight blackish lunules; cilia with fine pale lines at base and middle. Hind wing greyish uniformly suffused with reddish brown; a fine dark terminal line; cilia brownish white with a dark line through them; the underside with slight discoidal bar and traces of curved postmedial line.

Hab. Tibet, Kuku-noor (*Rückbeil*), type † in Coll. Püngeler. *Exp.* 50 millim.

3232. Agroperina conradi. (Plate CXVIII. fig. 13.)

Orthosia conradi, Grote, Bull. U.S. Geol. Geogr. Surv. Terr. v. p. 203 (1879); Smith, Cat. Noct. N. Am. p. 219.
Orthosia citima, Grote, Papilio, iii. p. 74 (1883); Smith, Cat. Noct. N. Am. p. 219.

Head and thorax greyish white tinged with rufous or brown; abdomen grey tinged with ochreous, the anal tuft with rufous. Fore wing whitish irrorated with reddish brown, the medial and terminal areas rather darker, the postmedial area whiter except towards costa; traces of a subbasal line from costa to submedian fold; antemedial line defined by grey on inner side, waved, oblique from costa to submedian fold; claviform slightly defined by brown; orbicular whitish defined by brown, small, oblique, rather quadrate; reniform with brownish centre and white annulus defined by brown, some fuscous brown in lower part, angled inwards on median nervure; traces of a medial line oblique below the cell; postmedial line defined by whitish on outer side, bent outwards below costa, then dentate and produced to black points on the veins, oblique below vein 4, some white points beyond it on costa; subterminal line whitish defined by brown on inner side, slightly angled outwards at vein 7 and excurved at middle; a slight pale line at base of cilia. Hind wing whitish tinged with brown, the veins and

terminal area darker; cilia white; the underside white, the costal and terminal areas irrorated with brown, a sinuous postmedial line.

Ab. 1. Much more rufous in colour.

Hab. CANADA, Alberta, Calgary, 1 ♀; U.S.A., Colorado (*Snow*), 2 ♂, 2 ♀ type, Hall Valley, 1 ♀, Arizona. *Exp.* 46 millim.

3233. Agroperina lutosa. (Plate CXVIII. fig. 14.)

Orthosia lutosa, Andrews, Can. Ent. ix. p. 99 (1877); Smith, Cat. Noct. N. Am. p. 220.

♂. Head and thorax white mixed with pale brown; abdomen ochreous white. Fore wing grey-white irrorated with rufous; subbasal line represented by a dark point on costa; antemedial line waved, slightly curved; claviform absent; orbicular faintly defined by brown, round; reniform with slight pale annulus defined by brown, its lower part filled in with fuscous, somewhat angled inwards on median nervure; postmedial line bent outwards below costa, then dentate and produced to black points on the veins, oblique below vein 4, some pale points beyond it on costa; subterminal line pale slightly defined by brown on inner side, somewhat angled outwards at vein 7 and excurved at middle, the area beyond it rather darker; a terminal series of slight black lunules; cilia ochreous and fuscous. Hind wing ochreous white slightly irrorated with brown; the veins browner; traces of a diffused subterminal band; the underside with the costal area irrorated with rufous, a dark discoidal spot and postmedial line on costal area.

♀. Head, thorax, and fore wing redder.

Hab. U.S.A., Middle, Eastern, and Central States, Vermont, Massachusetts, Newton (*Thaxter*), 1 ♂, 1 ♀, New York, New Jersey, S. Dakota, Volga, 1 ♂, 1 ♀, ? California 1 ♂. *Exp.* 38–40 millim.

3234. Agroperina helva. (Plate CXVIII. fig. 15.)

Orthosia helva, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 310 (1875); Smith, Cat. Noct. N. Am. p. 219.

Head and thorax fulvous yellow tinged with rufous and slightly irrorated with fuscous; sides of palpi and frons fuscous; tarsi fuscous with pale rings; abdomen yellow tinged with rufous towards extremity, the dorsal crests tipped with fuscous and grey. Fore wing fulvous yellow tinged with rufous; subbasal line double, minutely waved, from costa to submedian fold, a dark spot beyond it in cell before the antemedial line, which is double, the inner line slightly sinuous, the outer strongly excurved in the interspaces and angled inwards on the veins; claviform slightly defined by brown; orbicular

and reniform incompletely defined by brown, the former elliptical, open above, the latter constricted at middle and with its lower part filled in with fuscous; a brown medial line, oblique and sinuous from costa to median nervure, then dentate; postmedial line double at costa, bent outwards below costa, then dentate and with two series of black points beyond it on the veins, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line defined on inner side by fuscous forming a diffused patch at costa and almost obsolete between veins 7 and 5, angled outwards at vein 7, excurved at middle and angled inwards on vein 2; a terminal series of small black lunules; cilia with fuscous marks at tips. Hind wing yellow suffused with fuscous except on basal half of costal area and termen; a terminal series of slight dark lunules; cilia yellow; the underside yellow, the costal and terminal areas irrorated with brown, a small discoidal lunule and sinuous postmedial line.

Hab. Canada; U.S.A., West to the Mississippi Valley and Colorado, New York, Schenectady (*Lintner*), 1 ♂, 1 ♀ type, Pennsylvania, New Jersey, Elizabeth (*Kemp*), 1 ♀. *Exp.* ♂ 42, ♀ 44 millim.

3235. Agroperina inficita. (Plate CXVIII. fig. 16.)

Graphiphora inficita, Wlk. xi. 746 (1857).
Orthosia belangeri, Morr. Proc. Bost. Soc. N. H. xvii. p. 149 (1874); Smith, Cat. Noct. N. Am. p. 220.

Head and thorax bright rufous; tibiæ and tarsi tinged with fuscous; abdomen pale brownish ochreous, the lateral and anal tufts rufous. Fore wing bright rufous; subbasal line represented by a slight striga from costa; antemedial line rufous, oblique, waved, with dark point at costa; claviform absent; orbicular very indistinct, small, with pale centre slightly defined by brown, oblique elliptical; reniform with slight pale annulus faintly defined by brown, rather constricted at middle and angled inwards on median nervure; a rufous medial line very oblique below the cell; postmedial line slightly defined by pale colour on outer side, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved; subterminal line faint, pale, slightly defined by deeper rufous on inner side, angled outwards at vein 7 and excurved at middle; the veins of terminal area with dark streaks; a slight dark terminal line. Hind wing rufous suffused with brown; the terminal area darker; cilia pale rufous; the underside ochreous, the costal and terminal areas suffused with rufous, a dark discoidal lunule, sinuous postmedial line, and traces of diffused subterminal band.

Hab. ignotus, 1 ♂ type; Canada, Quebec (*Kemp*), 1 ♂, 1 ♀. *Exp.* 38–44 millim.

3236. Agroperina morna. (Plate CXVIII. fig. 17.)

Hadena morna, Streck, Rep. Chief Eng. Ruffner, v. p. 1861 (1879); Smith, Cat. Noct. N. Am. p. 134.
Hadena hulstii, Grote, N. Am. Ent. i. p. 93 (1880); Smith, Cat. Noct. N. Am. p. 134.

Head and thorax ochreous white suffused with rufous; abdomen ochreous slightly tinged with rufous, the lateral fringes of hair and anal tuft bright rufous. Fore wing greyish ochreous suffused with purplish rufous, the veins of terminal half with slight dark streaks; subbasal line represented by faint double oblique rufous striæ from costa; antemedial line very indistinct, rufous, oblique and sinuous to submedian fold, then inwardly oblique; orbicular and reniform small, pale, undefined, the former oblique elliptical, the latter rather constricted at middle and with fuscous mark at lower angle of cell; a diffused rufous medial line oblique to lower angle of cell, then inwardly oblique; postmedial line rufous slightly defined by ochreous on outer side, bent outwards below costa, then minutely dentate and produced to dark points on the veins, excurved to vein 4, then oblique, some slight pale points beyond it on costa; subtermimal line pale, excurved below vein 7, excurved and slightly waved at middle; a fine brown terminal line; cilia bright rufous slightly mixed with ochreous. Hind wing ochreous white tinged with rufous, the veins and terminal area suffused with brown; a faint sinuous brown postmedial line; cilia pale rufous with traces of a brown line near base; the underside pale ochreous tinged with rufous especially on costal and terminal areas, a slight discoidal lunule and faint diffused curved postmedial line.

Ab. 1. Head, thorax, and fore wing pale rufous.

Ab. 2. Head, thorax, and fore wing deep rufous; abdomen and hind wing more tinged with rufous.

Hab. Canada, Manitoba, Winnipeg, 1 ♂, Brandon 1 ♀, Alberta, Calgary (*Woolley-Dod*), 12 ♂, 1 ♀; U.S.A., Wyoming, Yellowstone Park, 1 ♂, Colorado, 1 ♂, 1 ♀, Glenwood Springs (*Barnes*), 1 ♀. *Exp.* 38–46 millim.

Genus ŒDEREMIA,* nov.

Type, *Œ. lithoplasta.*

Proboscis fully developed; palpi obliquely upturned and slightly fringed with hair in front, the 2nd joint hardly reaching middle of frons; the 3rd short; frons with rounded prominence with curved corneous plate below it; eyes large, round; antennæ of male ciliated; thorax clothed with scales and hair mixed, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal crests on basal segments, the crest on 3rd segment large. Fore wing with the apex rounded, the termen slightly crenulate and somewhat excised towards tornus; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

* This genus might perhaps be better placed as derived from *Bryophila*.

A. Fore wing with the ground-colour white.
  a. Fore wing thickly irrorated with black and suffused in parts with red-brown ..... *diadela.*
  b. Fore wing slightly irrorated with black and tinged in parts with ochreous brown.
    a^1. Fore wing with the whole medial area tinged with ochreous brown defining the white reniform ..... *lithoplasta.*
    b^1. Fore wing with brown band on basal half of medial area, the reniform undefined ..... *medialis.*
B. Fore wing with the ground-colour pale greenish..... *umovi.*

*3237. Œderemia diadela. (Plate CXVIII. fig. 18.)

Bryophila diadela, Püng. ined.

♂. Head and thorax yellowish white mixed with black and red-brown; frons with black bar; antennæ black; tarsi black ringed with white; abdomen white irrorated with black, the crests tipped with black. Fore wing yellowish white thickly irrorated with black, the antemedial area white, without black irroration at middle, some rufous suffusion beyond the antemedial and before the subterminal line; subbasal line black defined by white on outer side, waved, from costa to vein 1; antemedial line black defined by white on inner side, oblique, waved; claviform faintly defined by black; orbicular and reniform large, defined by black, their centres almost filled in with black irroration, the former round and touching the antemedial line, the latter constricted at middle; postmedial line black defined by white on outer side, bent outwards below costa, then dentate, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line slight, whitish, defined on inner side by rufous suffusion, excurved below vein 7 and at middle and bent outwards to tornus; a terminal series of small black lunules defined by white on inner side; cilia white mixed with black. Hind wing white faintly tinged with brown and irrorated with fuscous, the terminal area suffused with fuscous; a fuscous discoidal lunule and postmedial line excurved below costa, then oblique; a terminal series of blackish striæ from apex to vein 2 defined by white on inner side; cilia yellowish white; the underside white, the costal area tinged with ochreous, the termen irrorated with fuscous, a small discoidal spot and diffused curved postmedial line.

Hab. W. Turkestan, Alexander Mts., type † ♂ in Coll. Püngeler. *Exp.* 34 millim.

*3238. Œderemia lithoplasta.

Bryophila lithoplasta, Püng. ined.

Head and thorax white faintly tinged with brown and irrorated with a few black scales; antennæ blackish; tegulæ and patagia with some black scales on edges; tarsi banded with black; abdomen white dorsally suffused with fuscous, the crests black at tips, extremity of anal tuft black in female. Fore wing white tinged in parts with ochreous brown and slightly irrorated with black; subbasal line black, waved, from costa to vein 1; antemedial line

black defined by white on inner side, oblique, waved; claviform defined by black scales at extremity; orbicular and reniform white defined by a few black scales, the former with ochreous-brown centre, round, the latter with brown line near inner edge; a diffused dark medial shade; postmedial line double, the inner line black, the outer indistinct, bent outwards below costa, then dentate, excurved to vein 4, then strongly incurved, some dark suffusion beyond it on costal area with white and black points on the costa; subterminal line white, defined on inner side by a few black scales, minutely waved, excurved below vein 7 and at middle, the area

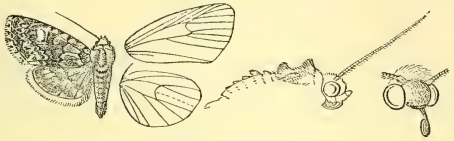


Fig. 65.—*Œderemia lithoplasta*, ♂. ½.

beyond it with dark suffusion; a terminal series of minute blackish lunules defined by white on inner side; cilia white with series of slight dark spots at middle and tips. Hind wing white suffused with fuscous brown except towards tornus; a slight discoidal bar, rather diffused postmedial line incurved below vein 3 and diffused subterminal band; cilia white; the underside white with fuscous discoidal lunule, diffused curved postmedial line, and diffused subterminal band.

Hab. W. Turkestan, Tashkent, type † ♂ ♀ in Coll. Püngeler. *Exp.* ♂ 32, ♀ 34 millim.

3239. **Œderemia medialis**, n. sp. (Plate CXXIV. fig. 8.)

♂. Head and thorax white, the latter tinged in parts with rufous; palpi tinged with rufous; tarsi fuscous ringed with white; abdomen ochreous white. Fore wing ochreous white; the basal area with two brown patches on costa; a few subbasal black scales below the cell and on inner margin; a medial brown band with some leaden grey scales on it, bounded on inner side by the erect waved antemedial line formed by raised black scales; traces of a whitish orbicular defined by a few black scales; the reniform represented by some black scales on its inner edge; postmedial line very indistinct, white slightly defined in parts on inner side by brown, bent outwards below costa, then somewhat dentate, incurved below vein 4 and below vein 2 forming the outer edge of the medial band, some slight brown streaks beyond it on costa; subterminal line white defined on inner side by red-brown suffusion especially on costal half, excurved below vein 7 and at middle; a terminal series of brown striæ. Hind wing white, the terminal area broadly suffused with fuscous brown from apex to vein 2, then the termen slightly suffused.

Hab. Beloochistan, Quetta (*Nurse*), 1 ♂ type. *Exp.* 26 millim.

*3240. ? Œderemia umovi.

Bryophila umovii, Ev. Bull. Soc. Mosc. 1846, iii. p. 85, pl. 2. f. 3; id. 1855, iii. p. 167; Herr.-Schäff. Eur. Schmett., Noct. f. 630; Staud. Cat. Lep. pal. p. 167.
Bryophila colorata, Krul. Ural. Ges. Nat. Fr. xii. p. 71 (1890); id. Ent. Zeit. Guben. v. p. 80.

Head and thorax pale greenish; abdomen whitish. Fore wing pale greenish; subbasal line waved, from costa to vein 1; antemedial line excurved in and below cell; orbicular represented by a black point; reniform blackish; postmedial line bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some whitish points beyond it on costa; subterminal line defined on inner side by small dentate black marks; a terminal series of small black lunules. Hind wing white; a diffused dark discoidal lunule, postmedial line excurved to vein 4, then incurved, and diffused subterminal band; a terminal series of dark striæ; cilia with a slight dark line through them.

Hab. S.E. Russia, Simbirsciensi, Urals. *Exp.* 34 millim. This species is unknown to me.

Genus **EREMOBIA**.

	Type.
Eremobia, Steph. Ill. Brit. Ent., Haust. iii. p. 94 (1829)	*ochroleuca.*
Ilarus, Guen. Ann. Soc. Ent. Fr. vii. p. 208 (1838)	*ochroleuca.*
Crymodes, Guen. Ann. Soc. Ent. Fr. 1841, p. 238. non descr.; id. Noct. i. p. 184 (1852)	*cervina.*
Heterographa, Staud. Stett. ent. Zeit. 1877, p. 185 (non descr.)	*zelleri.*
Phœbophilus, Staud. Stett. ent. Zeit. 1888, p. 21	*amœna.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and fringed with hair in front, the 3rd short, blunt; frons smooth; eyes large, rounded; antennæ of male typically minutely serrate and ciliated; head and thorax clothed with rough hair and hair-like scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal series of crests on basal segments. Fore wing triangular, the apex rounded, the termen evenly curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

Sect. I. (*Phœbophilus*). Antennæ of male bipectinate, with rather long branches to near apex.

3241. Eremobia amœna.

Phœbophilus amœnus, Staud. Stett. ent. Zeit. 1888, p. 21; id. Cat. Lep. pal. p. 177.

♂. Head and thorax ochreous white mixed with dark brown; palpi brown at sides; frons white; tegulæ with dark line near tips; patagia with dark lines near edges; tarsi brown ringed with white; abdomen whitish suffused with brown. Fore wing yellow-brown irrorated with fuscous; subbasal line double, black filled in with white, angled outwards in cell and ending at submedian fold where there is a short black streak beyond it above an oblique

white mark; a white mark in cell before the antemedial line, which is black strongly defined by white on inner side, waved, oblique from costa to submedian fold, then inwardly oblique; claviform a small white mark beyond the angle of antemedial line defined by black; orbicular and reniform white slightly defined by black and with yellow-brown centres, the former oblique elliptical, the latter large; postmedial line defined by white on outer side, slightly bent outwards below costa, oblique to discal fold where it is slightly angled inwards, somewhat excurved and waved between veins 5 and 3, then angled inwards in submedian fold and outwardly

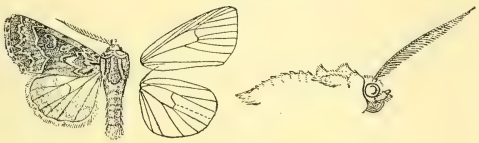


Fig. 66.—*Eremobia amœna*, ♂. ½.

oblique to inner margin, some white points beyond it on costa; subterminal line white, dentate outwards at veins 7, 6, 4, 3, then incurved and bent outwards to near tornus; a fine waved dark terminal line; cilia chequered yellow-brown and white with slight dark line through them. Hind wing ochreous white suffused with brown; a whitish mark on termen below vein 2; cilia white with a slight brown line through them; the underside white irrorated with yellow-brown, a small discoidal spot and diffused postmedial line bent inwards at vein 2, the area beyond it tinged with yellow-brown.

Hab. W. Turkestan, Ferghana, Issyk Kul, 1 ♂; E. Turkestan, Kuldja, 4 ♂. *Exp.* 36–40 millim.

Sect. II. (*Eremobia*). Antennæ of male bipectinate, with very short branches ending in fasciculate cilia.

A. Fore wing ochreous white suffused with rufous ..... *ochroleuca.*
B. Fore wing grey suffused with fuscous ..... *thula.*

3242. Eremobia ochroleuca.

Noctua ochroleuca, Schiff. Wien. Verz. p. 87 (1776); Esp. Schmett. iv. p. 373, pl. 126. ff. 1–4; Hübn. Eur. Schmett., Noct. f. 92 (*flamma*); Dup. Lép. Fr. vi. p. 311, pl. 92. f. 3; Steph. Ill. Brit. Ent., Haust. iii. p. 95; Frr. Neue Beitr. f. 657; Staud. Cat. Lep. pal. p. 172.

Head, thorax, and abdomen ochreous white tinged with rufous; palpi rufous at sides; tarsi rufous ringed with white; abdomen with the dorsal crests dark. Fore wing ochreous white suffused with rufous, the inner part of medial area and postmedial area darker; subbasal line represented by a dark striga from costa defined by whitish on outer side; antemedial line dark brown defined by

whitish on inner side, slightly angled outwards below costa, then oblique to submedian fold where it is angled outwards to postmedial line, then incurved; claviform absent; a dark brown striga from costa above the orbicular which has a very diffused and ill-defined brown outline, confluent on inner side with the antemedial line and extending to well below cell; a dark brown striga from costa above the reniform which is slightly defined by brown on inner side, on outer diffused into the whitish suffusion on inner side of postmedial line which is slightly bent outwards below costa,

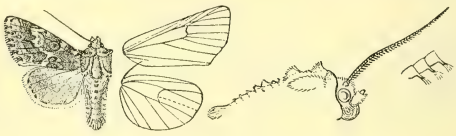


Fig. 67.—*Eremobia ochroleuca*, ♂. ½.

then somewhat dentate, incurved at discal fold, very oblique below vein 4 and angled inwards in submedian fold to the antemedial line, some white points beyond it on costa; subterminal line strong, whitish, excurved below vein 7 and at middle, angled inwards at discal and submedian folds; some dark points on termen towards apex; cilia chequered black-brown and white. Hind wing ochreous whitish suffused with red-brown, the terminal area darker; cilia white with a faint brown line through them except towards tornus; the underside ochreous white; a rufous postmedial rather diffused line on costal area and a diffused subterminal band.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller and Frey Colls.; Austria; Hungary; Switzerland; Spain, Aragon; Italy; Sicily, Syracuse, Zeller Coll.; S. Sweden; S. Russia, Leech Coll.; Balcans; Armenia, Pontus, Taurus Mts., 2 ♂, 1 ♀. *Exp.* 36–38 millim.

Larva. Meyr. Brit. Lep. p. 134; Barrett, Lep. Brit. v. p. 28, pl. 188. f. 2. Whitish green; dorsal and subdorsal lines broad, whitish; subspiracular line whitish, dark-edged above; warts black; head pale green. Food-plant: seeds of *Dactylis*. 5–6.

*3243. ? Eremobia thula.

Hadena thula, Streck. Lep. Rhop. & Het., Suppl. i. p. 7 (1898); Dyar, Cat. Lep. N. Am. p. 115.

♂. Head, thorax, and abdomen smoky grey. Fore wing grey, the medial area tinged with fuscous extending to just beyond postmedial line; a black streak below base of cell; antemedial line curved; orbicular defined by black; reniform large, pale grey defined by black; postmedial line blackish, excurved to vein 4, then incurved; subterminal line whitish, distinct, expanding into a white spot defined on inner side by a brown line and on outer

by a black patch; a terminal series of small black marks; cilia grey. Hind wing fuscous, the terminal area slightly darker.

Hab. U.S.A., Washington, Seattle. *Exp.* 25 millim. This species is unknown to me. Prof. Smith informs me that it has pectinated antennæ and resembles *Oligia minuscula*, but without the black streak on medial area.

Sect. III. Antennæ of male strongly serrate and fasciculate.

*3244. Eremobia deccerti.

Hadena deckerti, Gr. Grschm. ? ined.

♂. Head and thorax olive-green mixed with brown and some black; antennæ nearly pure white above; tarsi blackish ringed with white; abdomen ochreous white tinged with brown and irrorated with fuscous. Fore wing sap-green irrorated with black, some red-brown and whitish suffusion on medial area below the cell and on inner margin; subbasal line double, black filled in with white, curved, from costa to vein 1; antemedial line double, black filled in with white, angled outwards below costa, then oblique, waved; claviform faintly defined by black at extremity; orbicular and reniform white irrorated with red-brown and defined at sides by

Fig. 68.—*Eremobia deccerti*, ♂. ½.

black, the former quadrate, the latter slightly angled inwards on median nervure; a diffused blackish medial line, oblique from costa to median nervure, then inwardly oblique; postmedial line double, black filled in with white, bent outwards below costa, then minutely waved, oblique below vein 4, some white points beyond it on costa with black streaks between them; subterminal line formed by rather dentate white marks defined on inner side by black, slightly excurved below vein 7, the veins beyond it streaked with blackish; a terminal series of black points; cilia reddish ochreous mixed with fuscous and with black line through them. Hind wing ochreous tinged with brown, the terminal area suffused with fuscous; a curved postmedial line; a pale patch on termen towards tornus; a fine black terminal line; cilia ochreous at base, white at tips and with black line through them; the underside white tinged with ochreous and irrorated with brown, a dark discoidal spot and sinuous rather diffused postmedial line.

Hab. W. Siberia, Altai, cotype †♂ in Coll. Püngeler. *Exp.* 38 millim.

Sect. IV. Antennæ of male minutely serrate and fasciculate.

A. Fore wing with two white streaks in base of cell extending to antemedial line ..... *decipiens.*
B. Fore wing without white streaks in base of cell.
a. Head, thorax, and fore wing without reddish tinge.
a^1. Fore wing with the basal area and postmedial area except towards costa much whiter than the ground-colour ... *hilli.*
b^1. Fore wing with the basal and postmedial areas concolorous.
a^2. Fore wing with the antemedial line distinct.
a^3. Fore wing with the ground-colour bluish white, the orbicular very oblique ..... *albertina*
b^3. Fore wing with the ground-colour not bluish white, the orbicular less oblique ..... *claudens.*
b^2. Fore wing with the antemedial line obsolescent ..... *unicincta.*
b. Head, thorax, and fore wing tinged with reddish ..... *tenera.*

3245. Eremobia decipiens.

Hadena decipiens, Alph. Iris, viii. p. 193 (1895); id. Rom. Mém. ix. p. 214, pl. 13. f. 13; Staud. Cat. Lep. pal. p. 173.
Phæbophilus sajanus, B. Haas, Iris, xviii. p. 133, pl. 5. f. 8 (1906).

♂. Head and thorax dark brown mixed with white and fuscous; tegulæ with black line at middle and dark tips; patagia with white streaks; pectus and legs olive-brown mixed with greyish, the tarsi with slight white rings; abdomen olive-brown with slight whitish segmental lines. Fore wing olive-brown; a small fan of white-tipped scales at base; subbasal line represented by double black striæ from costa and cell, filled in with white and with two

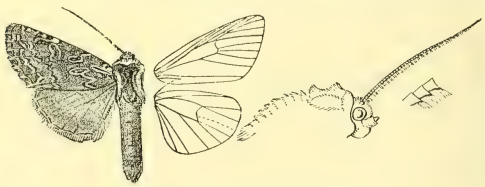


Fig. 69.—*Eremobia decipiens*, ♂. ½.

white streaks between them in cell, extending to the antemedial line, which is defined by white on inner side, angled outwards below costa, in submedian fold and above inner margin and inwards in cell and on vein 1; claviform defined by white, rather elongate and acute at extremity, with white streak in middle; orbicular and reniform with undefined white annuli, the former very oblique elliptical, open above, the latter open above and below; postmedial line defined by white on outer side, bent outwards below costa, then minutely dentate, excurved to vein 4, then oblique, some white points beyond it on costa; subterminal line white slightly defined by fuscous on inner side, angled outwards at vein 7, excurved at middle and angled inwards at discal

and submedian folds; a terminal series of slight dark lunules; cilia white and brown with slight dark line through them. Hind wing olive-brown; cilia white with a brown line through them from apex to vein 2; the underside whitish irrorated with brown, the terminal area suffused with brown, a dark discoidal spot and diffused curved postmedial line.

Hab. E Turkestan, Korla; Mongolia, Changhai Mts.; E. Siberia, Sajan, 1 ♂. *Exp.* 44 millim.

3246. Eremobia hilli. (Plate CXVIII. fig. 19.)

Hadena hillii, Grote, Ann. Lyc. Nat. Hist. N.Y. xi. p. 305 (1876); Smith, Cat. Noct. N. Am. p. 142.

♂. Head and thorax white mixed with some brown; palpi and frons blackish at sides; tarsi slightly ringed with white; abdomen whitish tinged with brown except at base, the dorsal crests darker. Fore wing white tinged with brown in parts and irrorated with blackish; a black streak below base of cell; subbasal line represented by oblique black striæ from costa and cell; a black mark in cell before the antemedial line, which is strong, black defined by white on inner side, oblique, dentate; claviform defined by black, elongate and extending to postmedial line; orbicular and reniform white strongly defined by black, and their centres slightly tinged with brown, the former rather oblique quadrate; an indistinct diffused medial line, oblique from costa to below cell, then incurved; postmedial line strong, black defined by white on outer side, forming a diffused patch in submedian interspace, bent outwards below costa, then dentate and produced to slight black streaks on the veins, slightly incurved at discal fold and strongly below vein 4, some white points beyond it on costa; subterminal line whitish defined by fuscous on inner side, angled outwards at vein 7 and excurved at middle; a terminal series of slight black lunules. Hind wing ochreous greyish nearly uniformly suffused with fuscous brown; a slight dark terminal line; cilia white; the underside whitish irrorated with brown, a small discoidal spot, sinuous postmedial line, and traces of diffused subterminal band.

Hab. U.S.A., Northern and Eastern States, New York, Lewis Co. (*W. W. Hill*), 1 ♂. *Exp.* 34 millim.

3247. Eremobia albertina, n. sp. (Plate CXVIII. fig. 20.)

Head and thorax grey-white mixed with black; palpi blackish at sides; frons with lateral black bars; antennæ black; tegulæ with blackish line near tips; tarsi banded with black; abdomen grey mixed with fuscous, the dorsal crests black. Fore wing bluish white tinged with brown and thickly irrorated with black, the veins with slight black streaks; a black streak below base of cell; subbasal line represented by slight black marks below costa and cell; antemedial line with blackish patch at costa, then black defined by white on inner side and with small black mark before it

in cell, oblique, sinuous, angled inwards on vein 1; claviform defined by black, very large and elongate, acute at extremity and with black streak from it to postmedial line; orbicular and reniform with grey centres and whitish annuli slightly defined by black; the former oblique elliptical; postmedial line black defined by white on outer side, bent outwards below costa, then dentate; excurved to vein 4, then incurved, some whitish points beyond it on costa; subterminal line indistinct, dark, dentate; a terminal series of black striæ; cilia intersected with whitish and with a slight dark line through them. Hind wing grey suffused with brown, the terminal area somewhat darker; a faint discoidal spot, indistinct sinuous postmedial line and fine black terminal line; cilia grey with a dark line through them; the underside grey-white irrorated with fuscous, a dark discoidal spot and somewhat diffused sinuous postmedial line.

Hab. CANADA, Manitoba, Aweme (*Criddle*), 1 ♂, Alberta, Calgary (*Wolley-Dod*), 2 ♂, 2 ♀ type. *Exp.* 34 millim.

3248. Eremobia claudens. (Plate CXVIII. fig. 21.)

Hadena claudens, Wlk. xi. 753 (1857); Smith, Cat. Noct. N. Am. p. 142.
Polia leucoscelis, Grote, 6th Rep. Peab. Ac. Sci. p. 26 (1874); Smith, Cat. Noct. N. Am. p. 142.
Dryobota fibulata, Morr. Bull. Buff. Soc. Nat. Sci. ii. p. 112 (1874).

Head and thorax grey mixed with fuscous brown; palpi blackish at sides; frons with black bar; tegulæ with slight dark medial line; patagia with black line near upper edge; tarsi ringed with white; abdomen grey suffused and irrorated with brown. Fore wing grey irrorated and partially suffused with brown; a black streak below base of cell; subbasal line represented by oblique black striæ from costa and cell; antemedial line slightly defined by white on inner side, waved, somewhat oblique; claviform defined by black, acute at extremity and connected with postmedial line by a black streak; orbicular and reniform whitish defined by black, their centres slightly tinged with brown, the former oblique elliptical; traces of a sinuous medial line; postmedial line slightly defined by white on outer side and with diffused white patch beyond it in submedian interspace, bent outwards below costa, then minutely dentate, excurved to vein 4, then incurved, some white points beyond it on costa and the veins slightly streaked with black; subterminal line whitish defined on inner side by slight brown lunules, excurved below vein 7 and minutely dentate at veins 4,3; a terminal series of slight dark striæ; cilia brown and grey. Hind wing fuscous brown, the basal half slightly paler; a slight pale postmedial line; cilia white at tips; the underside grey tinged with ochreous and irrorated with brown, a small dark discoidal spot, sinuous postmedial line, and traces of diffused subterminal band.

Hab. NEWFOUNDLAND (*St. John*), 1 ♂ type; CANADA; U.S.A., Maine, Massachusetts, New York, Wisconsin, Racine, 1 ♀ type *leucoscelis*, Colorado. *Exp.* ♂ 38, ♀ 40 millim.

3249. Eremobia unicincta. (Plate CXVIII. fig. 22.)

Hadena unicincta, Smith, J. N.Y. Ent. Soc. x. p. 41 (1902); Dyar, Cat. Lep. N. Am. p. 114.

♀. Head and thorax grey-white mixed with fuscous; tarsi banded with fuscous; abdomen whitish irrorated with brown. Fore wing grey-white thickly irrorated and suffused with fuscous; a sinuous black streak in base of submedian fold confluent with lower edge of claviform; subbasal line represented by a slight striga from costa; antemedial line indistinct, slightly defined by whitish on inner side, oblique, very slightly sinuous; claviform strongly defined by black, elongate and extending to postmedial line; orbicular and reniform large, grey-white defined by black, the former oblique elliptical, open above; postmedial line slightly defined by white on outer side, bent outwards below costa, dentate and excurved to vein 4, then strongly incurved, some white points on costa beyond it; subterminal line indistinct, whitish defined by fuscous on inner side, forming slight dentate marks at middle, somewhat angled outwards at vein 7 and excurved at middle; a terminal series of slight black lunules. Hind wing whitish suffused with brown especially on terminal area; a fine dark terminal line; cilia white with slight brownish line near base; the underside white irrorated with brown, a dark discoidal spot.

Hab. U.S.A., Oregon, 1 ♀, California. *Exp.* 40 millim.

*3250. ? Eremobia tenera. (Plate CXVIII. fig. 23.)

Hadena tenera, Smith, Proc. Wash. Acad. Sci. ii. p. 491 (1900); Dyar, Cat. Lep. N. Am. p. 115.

♂. Head and thorax rusty red-brown; tegulæ rather darker with a dark line near tips; patagia tinged with fuscous; abdomen dull grey. Fore wing rusty red-brown; a slight black streak below base of cell and another above inner margin; subbasal line represented by double dark striæ from costa and cell filled in with yellowish; antemedial line double, slightly excurved and sinuous; claviform moderate, slightly defined by black, a black streak from it to postmedial line; orbicular slightly paler, elliptical; reniform with yellowish annulus defined on inner side by black; postmedial line black, double at costa, bent outwards below costa, then minutely lunulate and defined by yellowish on outer side, excurved to vein 4, then incurved; subterminal line yellowish, somewhat dentate at veins 4, 3; a terminal series of small black lunules. Hind wing whitish, the terminal area tinged with brown, a slight discoidal spot and diffused curved postmedial line; the underside greyish irrorated with red-brown, a discoidal lunule and diffused postmedial line.

Hab. Alaska, Kukak Bay. *Exp.* 40 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

Sect. V. (*Crymodes*). Antennæ of male ciliated.

A. Fore wing with the ante- and postmedial lines distinctly defined by white.
  a. Fore wing with the ground-colour not bluish white.
    a^1. Fore wing with the claviform represented by a short black streak, a small spot defined by black below orbicular ..... *pungeleri.*
    b^1. Fore wing with the claviform well-developed, no spot below orbicular ..... *zelleri.*
  b. Fore wing with the ground-colour bluish white ..... *alpigena.*
B. Fore wing with the ante- and postmedial lines not defined by white.
  a. Fore wing with the ground-colour white.
    a^1. Fore wing not tinged with yellow.
      a^2. Fore wing white irrorated with brown ..... *platinea.*
      b^2. Fore wing grey-white thickly irrorated with fuscous ..... *ferrea.*
    b^1. Fore wing slightly tinged with yellow ..... *montana.*
  b. Fore wing with the ground-colour ochreous.
    a^1. Fore wing with the postmedial line strongly excurved beyond the cell and very minutely dentate ..... *mutica.*
    b^1. Fore wing with the postmedial line slightly excurved beyond the cell and strongly dentate ..... *bischoffi.*
  c. Fore wing greenish white very thickly irrorated with dark brown.
    a^1. Fore wing with the cilia chequered brown and white . *alticola.*
    b^1. Fore wing with the cilia not chequered brown and white ..... *zeta.*
  d. Fore wing with the ground-colour fuscous brown ..... *dumetorum.*
  e. Fore wing with the ground-colour dark red-brown ..... *cervina.*

3251. Eremobia pungeleri. (Plate CXVIII. fig. 24.)

Heterographa pungeleri, Bartel, Iris, xvii. p. 161 (1904).

Head and thorax ochreous white mixed with dark brown; frons with lateral black bars; tegulæ with slight blackish line near base; tarsi banded with black; abdomen ochreous white suffused with dark brown forming obscure dorsal bands. Fore wing ochreous white irrorated with brown and black; subbasal line double, waved, from costa to submedian fold, a diffused black streak before and beyond it in submedian fold on brownish suffusion; antemedial line rather indistinctly double filled in with whitish, oblique, slightly angled outwards below costa, on median nervure, in submedian fold and above inner margin and inwards in cell; claviform represented by a slight black streak; the medial area with some brownish suffusion in, below and beyond cell; orbicular and reniform whitish with some brownish suffusion in centres and defined by black, the former oblique elliptical, connected with a curved mark below the cell confluent with lower part of reniform which is open above, its inner edge angled inwards in cell, constricted at middle, angled inwards below cell and its outer edge irregular; postmedial line defined by whitish on outer side, double at costa, strongly bent outwards below costa, then crenulate, oblique below vein 4; postmedial area suffused with dark brown

except towards costa, with black streaks in the interspaces and points on costa; subterminal line ill-defined, whitish, angled outwards below costa, inwards in discal fold and incurved below vein 3; a terminal series of small black lunules; cilia brown intersected with whitish. Hind wing white, the veins irrorated with brown; a slight discoidal point, postmedial series of black points on the veins except towards costa, diffused subterminal band and waved black terminal line; the underside with the costal and terminal areas slightly irrorated with black, a small black discoidal lunule, postmedial series of minute streaks on the veins, and some terminal lunules.

Hab. Palestine, Jordan, 1 ♂, 1 ♀. *Exp.* 36 millim. Type † ♂ ♀ in Coll. Püngeler.

3252. **Eremobia zelleri.** (Plate CXVIII. fig. 25.)

Mamestra zelleri, Christ. Hor. Soc. Ent. Ross. xii. p. 250, pl. 6. f. 24 (1876); Staud. Cat. Lep. pal. p. 170.
Luperina mira, Staud. Stett. ent. Zeit. 1877, p. 185.

Head and thorax whitish mixed with reddish brown; palpi with the 2nd joint tinged with fuscous at sides; patagia with diffused black line near upper edge; tarsi blackish ringed with white; abdomen whitish irrorated with brown. Fore wing whitish thickly irrorated with brown, the medial and postmedial areas suffused with brown leaving a whitish streak below costa; subbasal line represented by double black bars filled in with white from costa and cell, the latter with blackish streak from it to antemedial line, which is represented by double black bars from costa and a double waved line filled in with white from cell to inner margin, with an oblique black bar before it above inner margin; claviform defined by white and black except above; orbicular and reniform with brown centres and white annuli defined by black, the former very small, round, the latter constricted at middle and angled inwards on median nervure; a diffused sinuous brown line from cell to inner margin; postmedial line slight, blackish, defined by pure white on outer side, strongly bent outwards below costa, then oblique, minutely waved, with series of small alternating black and white spots beyond it on costa; subterminal line white strongly defined by brown suffusion on inner side, angled outwards at vein 7 and inwards at discal fold and below vein 2; a terminal series of small black lunules; cilia chequered brown and white. Hind wing white suffused and irrorated with brown; a dark discoidal spot and terminal series of lunules; cilia white; the underside white, the costal area irrorated with brown, a black discoidal spot, postmedial series of minute streaks on the veins, and terminal series of lunules.

Hab. Persia, W. Turkestan, Turcomania, 1 ♂, 1 ♀, Krasnowvodsk (*Christoph*), 1 ♂, Issyk-Kul; E. Turkestan, Ili, Kaschgar. *Exp.* ♂ 34, ♀ 40 millim.

3253. Eremobia alpigena.

Hadena alpigena, Boisd. Icones, pl. 84. f. 5 (1832); Mill. Icones, iii. p. 308, pl. 139. f. 1; Staud. Cat. Lep. pal. p. 159.
Hadena meissonieri, Guen. Noct. ii. p. 92, pl. 8. f. 9 (1852).

♀. Head and thorax white mixed with pale red-brown; palpi blackish at sides; tegulæ with strong black medial line; tarsi blackish ringed with white; abdomen grey-white tinged with brown especially towards extremity. Fore wing grey-white slightly irrorated with brown, the medial area tinged with brown except towards inner margin and the terminal area except towards apex and tornus; a sinuous black streak below base of cell; subbasal line represented by a slight dark striga from costa; antemedial line double filled in with whitish, slightly angled outwards below costa and in cell, then excurved; claviform defined by black, acute at extremity; orbicular and reniform large, whitish defined by black, the former elongate elliptical and with slight fuscous centre, the latter with its centre defined by fuscous; a medial brown line, diffused from costa to median nervure, then incurved and dentate; postmedial line black defined by whitish on outer side especially below vein 2, with double black striæ from costa, then dentate, touching the extremities of reniform and angled outwards at vein 5, then incurved, some white points beyond it on costa; subterminal line indistinct, whitish defined by brown on inner side, excurved below vein 7 and at middle, with black streaks beyond it above veins 6, 5, 4, and ending at a strong black fascia in submedian fold; a terminal series of black lunules; cilia chequered brown and ochreous white with a pale line at base. Hind wing white, the veins brown, blackish on terminal half, the inner and terminal areas irrorated with brown; a diffused waved black terminal line; cilia white with a brown line through them; the underside with the costal and terminal areas irrorated with brown, a blackish discoidal spot, indistinct postmedial line with short dark streaks on the veins, and terminal series of lunules.

Hab. S.E. France, 1 ♀; Algeria. *Exp.* 38 millim.

3254. Eremobia platinea.

Polia platinea, Treit. Schmett. Eur. v. 2. p. 34 (1825); Dup. Lép. Fr., Suppl. iii. p. 444, pl. 39. f. 3; Herr.-Schäff. Eur. Schmett., Noct. ff. 40, 487; Frr. Neue Beitr. pl. 618. ff. 3, 4; Staud. Cat. Lep. pal. p. 172.

Head and thorax white mixed with brown; sides of palpi and frons with blackish marks; tarsi fuscous ringed with white; abdomen white tinged with brown. Fore wing white irrorated with brown; subbasal line represented by double striæ from costa; antemedial line with double striæ from costa, then single, minutely waved, indistinct, oblique from costa to submedian fold; claviform absent; orbicular and reniform whitish, undefined or almost obsolete, the former rounded; a sinuous medial line oblique from

costa to below cell; postmedial line rather indistinct, dark, bent outwards below costa, then dentate and produced to blackish points on the veins, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line very indistinct, whitish faintly defined by brown on inner side, waved, slightly excurved below vein 7 and at middle; a terminal series of black points; cilia yellowish white with fuscous line near base. Hind wing whitish suffused with brown, the basal area paler; cilia white with a slight dark line near base; the underside white, the costal and terminal areas irrorated with brown, a discoidal point, sinuous postmedial line, and diffused subterminal band.

Hab. France, Sand Coll., Pyrenees; Germany, Zeller & Leech Colls.; Austria; Hungary, Frey Coll.; Switzerland; N. Italy. *Exp.* 40–50 millim.

Larva. Kirby, Butt. Moths Eur. p. 239; Hffm. Raup. p. 97.

Resembles that of *Parastichtis monoglypha*. Food-plant, *Hippocrepis comosa*.

*3255. Eremobia ferrea. (Plate CXVIII. fig. 26.)

Hadena anilis, Püng. Stett. ent. Zeit. 1896, p. 227 (nec Boisd.).
Hadena ferrea, Püng. Soc. Ent. xxi. p. 42 (1906).

Head and thorax grey-white mixed with rufous; palpi black at sides except at tips; frons with two lateral black points; antennæ slightly ringed with black; tarsi black ringed with white; abdomen grey-white mixed with fuscous. Fore wing grey-white thickly irrorated with fuscous; subbasal line indistinct, double, waved, from costa to submedian fold; antemedial line double, waved, rather diffused; claviform minute, faintly defined by fuscous; orbicular and reniform faintly defined by fuscous, the former round, the latter irregular; an indistinct diffused waved dark medial line excurved from costa to submedian fold; postmedial line blackish, double towards costa, bent outwards below costa, then dentate, incurved below vein 4, some white points beyond it on costa with black points between them; subterminal line very indistinct, whitish, defined on inner side by slight blackish marks, minutely waved and slightly excurved below vein 7 and at middle; a terminal series of black points; cilia ochreous white with a slight dark line through them. Hind wing grey-white tinged with fuscous especially on terminal area; cilia ochreous at base, white at tips and with slight dark line through them; the underside white, the costal area tinged with ochreous and slightly irrorated with fuscous, the terminal area irrorated with fuscous, a dark discoidal point and traces of a curved postmedial line.

Hab. Switzerland, Simplon, type † ♂ ♀ in Coll. Püngeler; N. Italy, Bormio. *Exp.* 40 millim.

This may be a variety of *E. platinea*.

*3256. Eremobia montana.

Polia montana, Herr.-Schäff. Eur. Schmett. vi. p. 55, Noct. f. 625 (1856); Staud. Cat. Lep. pal. p. 172.

♂. Head and thorax yellowish white slightly mixed with fuscous; palpi with some blackish at sides; antennæ brown; tarsi fuscous ringed with white; abdomen white, dorsally slightly tinged with fuscous. Fore wing yellowish white irrorated with fuscous; subbasal line indistinct, double, waved, from costa to submedian fold; antemedial line double, waved; claviform absent; orbicular defined by fuscous, round; reniform defined by fuscous on inner side only; an indistinct waved medial line; postmedial line indistinct, double towards costa, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some whitish points beyond it on costa with dark points between them; subterminal line very indistinct, whitish slightly defined by brown on inner side, waved, somewhat excurved below vein 7 and at middle; cilia ochreous at base, whitish at tips and with two faint waved dark lines through them. Hind wing whitish, the terminal area suffused with fuscous; cilia white; the underside white with faint diffused dark subterminal band.

Ab. 1. Ground-colour reddish ochreous irrorated with red-brown, the markings of fore wing reddish brown; hind wing ochreous white, the terminal area suffused with brown.—W. Turkestan.

Hab. Armenia; Asia Minor, Pontus, Taurus; W. Turkestan, Turcomania, Ferghana, Samarkand, in Coll. Püngeler. *Exp.* 44 millim.

3257. Eremobia mutica. (Plate CXVIII. fig. 27.)

Luperina mutica, Christ. Rom. Mém. ii. p. 47, pl. 3. f. 2 (1885); Staud. Cat. Lep. pal. p. 169.

♂. Head, thorax, and abdomen ochreous white mixed with fuscous brown and tinged with yellow; tarsi fuscous ringed with white. Fore wing ochreous white thickly irrorated with fuscous brown and suffused in parts with yellow, especially in submedian fold; subbasal line waved, from costa to submedian fold; antemedial line waved, nearly erect; claviform small, defined by black; orbicular yellow defined by black and with dark point in centre, round; reniform slightly defined by black on inner side and below and by yellow on outer side; a faint diffused curved medial line; postmedial line blackish defined by yellow on outer side, strongly bent outwards below costa, then very minutely dentate, excurved to vein 4, then incurved to below end of cell; subterminal line indistinct, yellow, waved, interrupted, excurved below vein 7 and at middle; a terminal series of slight dark lunules; cilia intersected with yellow and with slight pale waved line at middle. Hind wing whitish tinged with yellow and suffused with red-brown; cilia yellowish white with slight brown line near base;

the underside ochreous white thickly irrorated with reddish brown, a brown discoidal spot and curved postmedial line.

Hab. Armenia, Urdubad, 1 ♂ type; W. Turkestan, Turcomania. *Exp.* 38 millim.

*3258. Eremobia bischoffi.

Polia bischoffii, Herr.-Schäff. Eur. Schmett. ii. p. 265, Noct. ff. 440, 449 (1845); Staud. Cat. Lep. pal. p. 169.

♂. Head and thorax ochreous white mixed with some fuscous; palpi blackish at sides; pectus ochreous white; tarsi blackish ringed with white; abdomen ochreous white irrorated with a few brown scales. Fore wing greyish ochreous irrorated with fuscous especially on antemedial, outer half of medial and postmedial areas; subbasal line indistinct, double, waved, from costa to vein 1; antemedial line double, waved; claviform absent; orbicular and reniform pale, very faintly defined by brown, the former round, the latter with blackish lunule on its inner edge; a faint curved slightly waved dark medial line; postmedial line indistinct, blackish, slightly bent outwards below costa, then strongly dentate, excurved to vein 4, then incurved, some whitish points beyond it on costa; subterminal line only defined by the dark suffusion on its inner side, slightly angled outwards at veins 7, 6, 4, 3, and incurved at discal and submedian folds; a terminal series of slight dark lunules; cilia ochreous white, with faint waved dark line through them and mixed with fuscous at tips. Hind wing pale brownish ochreous irrorated with fuscous except at base; an indistinct postmedial line excurved at middle; cilia ochreous white; the underside ochreous white, the costal and terminal areas slightly irrorated with fuscous, a dark discoidal spot and indistinct diffused curved postmedial line.

Ab. 1. Head, thorax, and fore wing strongly suffused with dark blue-grey; abdomen and hind wing fuscous.

Hab. ?S.E. Turkey; Asia Minor, Lydia; Palestine, Jerusalem, in Coll. Püngeler. *Exp.* 50 millim.

3259. Eremobia alticola. (Plate CXVIII. fig. 28.)

Xylophasia alticola, Smith, Proc. U. S. Nat. Mus. xiii. p. 423 (1890); id. Cat. Noct. N. Am. p. 156.

♂. Head and thorax fuscous brown mixed with white; tarsi blackish ringed with white; abdomen grey mixed with brown, the anal tuft tinged with ochreous. Fore wing whitish thickly irrorated with dark brown, the antemedial and medial areas tinged with pale blue-green; a waved brown antemedial line; claviform defined by brown, small; orbicular and reniform greenish white defined by brown and with some dark scales in centres, the former rounded, the latter somewhat constricted at middle; postmedial line brown, strongly bent outwards below costa, then minutely dentate, oblique below vein 4; subterminal line very indistinct, whitish slightly

defined by brown on inner side, somewhat angled outwards at vein 7 and excurved at middle; a terminal series of indistinct dark spots; cilia chequered brown and white. Hind wing greyish thickly irrorated with brown; a slight dark terminal line; cilia white; the underside white irrorated with brown, a dark discoidal spot and sinuous postmedial line.

Hab. U.S.A., Colorado, Gibson Mts. (*Bruce*), 1 ♂. *Exp.* 40 millim.

3260. Eremobia zeta.

Polia zeta, Treit. Schmett. Eur. v. 2, p. 35 (1825); Herr.-Schäff. Eur. Schmett., Noct. f. 416; Staud. Cat. Lep. pal. p. 172.
Noctua pernix, Geyer, Samml. Eur. Schmett., Noct. f. 801 (1827); Frr. Neue Beitr. pl. 232. ff. 2, 3; Dup. Lép. Fr., Suppl. iii. p. 189, pl. 18. f. 3.
Polia clandestina, Boisd. Ind. Meth. p. 75 (1829).
Mamestra rivalis, Wlk. ix. 224 (1856).
Hadena curoi, Calb. Iris, i. p. 241, pl. 12. ff. 1, 2 (1888).
Hadena farinulenta, Christ. Iris, vi. p. 92 (1893); Staud. Cat. Lep. pal. p. 172.
Hadena zetina, Staud. Iris, xii. p. 342 (1899).

Head and thorax clothed with greenish-grey and fuscous hair and scales; pectus and legs ochreous mixed with fuscous; tarsi fuscous ringed with white; abdomen fuscous brown mixed with grey, the base of ventral surface and anal tuft tinged with fulvous. Fore wing fuscous overlaid with white and greenish scales; subbasal line waved, from costa to submedian fold; antemedial line defined by whitish on inner side, waved, excurved in submedian interspace and above inner margin and angled inwards on vein 1; claviform small, defined by blackish or obsolete; orbicular defined by blackish, oblique elliptical, or almost obsolete; reniform with incomplete whitish annulus or almost obsolete; medial line slight, waved, oblique from costa to median nervure or obsolete; postmedial line blackish defined by whitish on outer side, bent outwards below costa, then dentate and produced to black and white points on the veins, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line very indistinct, pale, waved, defined on inner side by very slight dentate dark marks, angled outwards at vein 7 and excurved at middle; a terminal series of minute black lunules; cilia fuscous at base, yellowish white at tips. Hind wing greyish suffused with brown, the basal area rather paler; a dark terminal line; cilia yellowish white with dark line through them; the underside white irrorated with fuscous, a black streak in base of cell, discoidal spot and sinuous postmedial line.

Ab. 1. *zetina*. Smaller; fore wing with the markings distinct.—Thian-Schan Mts.

Ab. 2. *pernix*. Much darker.

Ab. 3. *curoi*. Much paler, whitish.—N. Italy, Gran Sasso.

Hab. France, Pyrenees; Germany; Austria, Lecch Coll.; Switzerland, Zermatt (*A. H. Jones*), Engadine, Frey Coll., Stelvio,

Zeller Coll.; N. Italy; Bulgaria, Rilo Dagh (*Elwes*); Armenia; W. Siberia, Altai, Leech Coll.; E. Turkestan, Thian-Schan Mts. *Exp.* 50 millim.

*3261. Eremobia dumetorum.

Noctua dumetorum, Geyer, Eur. Schmett., Noct. f. 839 (1827); Boisd. Icones, pl. 78, f. 5; Staud. Cat. Lep. pal. p. 169.
Orthosia rhadama, Mill. Ann. Soc. Lyons, 1883, p. 153, pl. 1. f. 1; Staud. Cat. Lep. pal. p. 207.
Luperina bleonnensis, Schultz, Iris, xix. p. 38, pl. v. ff. 1, 2 (1906).

Head, thorax, and abdomen fuscous brown mixed with grey; tarsi fuscous ringed with white; abdominal crests tipped with white. Fore wing glossy fuscous brown thickly irrorated with grey; subbasal line indistinct, whitish, curved, from costa to vein 1; antemedial line grey, defined on each side by a few black scales, waved, oblique from costa to submedian fold; claviform faintly defined by black; orbicular and reniform with slight whitish annuli faintly defined by blackish, the former round; an indistinct curved waved blackish medial shade; postmedial line indistinct, blackish slightly defined by white on outer side, bent outwards below costa, then dentate, excurved to vein 4, then incurved, some pure white points beyond it on costa; subterminal line slight, white, more or less reduced to points, angled outwards at vein 7 and excurved at middle; a slight waved blackish terminal line; cilia ochreous white mixed with fuscous. Hind wing glossy fuscous grey-brown with a faint ochreous tinge; cilia ochreous whitish mixed with fuscous; the underside whitish tinged with brown, the costal and terminal areas suffused with greyish fuscous, a slight dark discoidal spot and indistinct rather diffused postmedial line.

Ab. 1. *bleonnensis*. Fore wing with more ochreous white mixed.

Hab. France, Basses-Alpes, Digne, in Coll. Püngeler. *Exp.* ♂ 36, ♀ 40 millim.

3262. Eremobia maillardi.

Phalæna oleracea, Mohr, Isl. Naturh. p. 90 (1786), nec Linn.
Noctua maillardi, Geyer, Eur. Schmett., Noct. f. 833 (1834); Dup. Lép. Fr., Suppl. iii. p. 191, pl. 18. f. 4; Herr.-Schäff. Eur. Schmett., Noct. f. 55; Staud. Cat. Lep. pal. p. 172.
Hadena exulis, Lef. Ann. Soc. Ent. Fr. 1836, p. 392, pl. 10. f. 2; Dup. Lép. Fr., Suppl. iii. p. 588, pl. 49. f. 2; Mill. Icones, pl. 65. ff. 9–11; Weir, Entom. 1884, p. 2, pl. 1. ff. 4, 7; Smith, Cat. Noct. N. Am. p. 137.
Hadena gelata, Lef. Ann. Soc. Ent. Fr. 1836, p. 393, pl. 10. f. 3; Dup. Lép. Fr., Suppl. iii. p. 590, pl. 49. f. 3.
Hadena græniandica, Dup. Lép. Fr., Suppl. iii. p. 228, pl. 21. ff. 3, *a*, *b* (1836), nec Zett.; Frr. Neue Beitr. pl. 411. f. 3; Herr.-Schäff. Eur. Schmett., Noct. f. 151.
Exarnis difflua, Geyer, Zuträge, p. 9, ff. 821–2 (1837).
Hadena marmorata, Zett. Ins. Lap. p. 937 (1840).
Hadena borea, Boisd. Ind. Meth. p. 119 (1840), non descr.; Herr.-Schäff. Eur. Schmett., Noct. ff. 566–7 (1847).
Noctua cervina, Germar, Faun. Ins. Eur. xxii. pl. 19 (1842).

Hadena assimilis, Doubl. Zoologist, v. p. 1914 (1847); Mill. Icones, pl. 84. f. 8.
Crymodes gelida, Guen. Noct. i. p. 186, pl. iv. f. 7 (1852).
Crymodes poli, Guen. Noct. i. p. 187 (1852).
Hadena schildei, Staud. Cat. Lep. pal. p. 172 (1901).

(*difflua*). Head and thorax dark reddish brown mixed with grey; tarsi blackish with pale rings; abdomen deep seal-brown. Fore wing olive-brown irrorated and suffused with black-brown, the veins with pale streaks; subbasal line represented by black striæ from costa and cell defined by whitish on outer side; antemedial line black defined by pale brown on inner side, oblique, waved, angled inwards to white points on the veins; claviform slightly defined by black, elongate and acute at extremity; orbicular and reniform greyish or olive-brown with slight whitish annuli defined by black, the former rounded or oblique elliptical; traces of a waved medial line; postmedial line defined by pale brown on outer side, bent

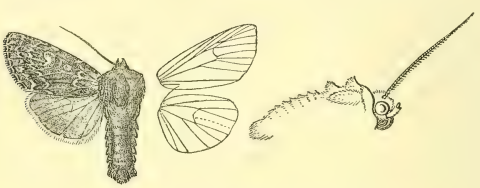


Fig. 70.—*Eremobia maillardi*, ♂. ¾.

outwards below costa, then dentate and produced to white points on the veins, excurved to vein 4, then oblique, some white points beyond it on costa; subterminal line pale brown defined on inner side by small somewhat dentate blackish marks, excurved below vein 7, excurved and minutely waved at middle; a terminal series of slight black lunules; cilia ochreous white with blackish line near base and blackish tips. Hind wing greyish suffused with fuscous brown, the terminal area darker; a fine dark terminal line; cilia ochreous white; the underside whitish irrorated with brown, a dark discoidal spot, curved minutely waved postmedial line, and diffused terminal band.—Labrador, Iceland, Shetland.

Ab. 1. *schildei*. A large red-brown form.—Finland.

Ab. 2. *assimilis*. Much blacker.—Scotland.

Ab. 3. *exulis*. A small grey-brown form without pale streaks on veins of fore wing.—Labrador, Iceland.

Ab. 4. *grœnlandica*. A small pale grey-brown form without streaks on veins of fore wing.—Greenland.

Ab. 5. *maillardi*. A large fuscous-brown form without streaks on veins of fore wing.—Pyrenees, Alps, Hungary, Norway, W. & E. Turkestan.

Hab. Greenland, 1 ♀, Zeller Coll.; Baffin's Land, Cumberland Gulf (*Crauford Noble*), 1 ♂; Labrador, 1 ♂, 4 ♀, Zeller, Frey,

and Grote Colls.; Britain, Shetland, Leech Coll., Scotland, Leech Coll.; France, Pyrenees; Austria; Hungary; Switzerland, Zeller, Frey, and Leech Colls., Zermatt (*A. H. Jones*), Engadine, Frey Coll.; Iceland, Zeller, Frey, and Leech Colls.; Norway; Finland; W. Turkestan, Tarbagatai Mts.; E. Turkestan, Kaschgar; Mongolia, Aksu. *Exp.* 42–60 millim.

Larva. Meyr. Brit. Lep. p. 123; Barrett, Lep. Brit. iv. p. 124, pl. 151. f. 1. Ochreous whitish; spiracles black; head reddish brown; thoracic plate ochreous. Food-plants: stems and roots of grasses, lichens. 8–5.

Genus EUROMŒA.

Type.

Euromoia, Staud. Rom. Mém. vi. p. 632 (1892) ..... *mixta.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately scaled, the 3rd moderate; frons smooth; eyes large, round; anteunæ of male laminate and almost simple; thorax clothed chiefly with scales, the pro- and metathorax with small spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

*3263. Euromœa mixta.

Euromoia mixta, Staud. Rom. Mém. vi. p. 632, pl. 12. f. 10 (1892); id. Cat. Lep. pal. p. 131.

♂. Head and thorax violaceous grey mixed with some black and olive-green; palpi black at sides except at tip; frons with black bar; tegulæ with olive-green medial band and whitish tips; patagia edged with black; legs largely mixed with black, the tarsi black ringed with white; abdomen grey suffused with fuscous.

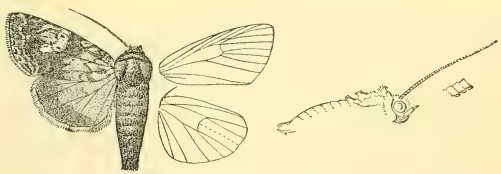


Fig. 71.—*Euromœa mixta*, ♂. ½.

Fore wing grey slightly irrorated with black; subbasal line black, double towards costa, waved, from costa to vein 1, some green suffusion beyond it on costal area and below the cell; antemedial line black, double towards costa, oblique, dentate, strongly incurved at vein 1; claviform absent; orbicular green defined by black, rather elliptical; reniform whitish defined by black, with black

points in upper and lower parts, rather constricted at middle; a strong green and black medial shade, oblique from costa to below end of cell; a slight waved line from lower angle of cell to inner margin; postmedial line double, the outer line indistinct, bent outwards below costa, oblique to vein 6, incurved at discal fold, bent inwards below vein 4, then waved, some whitish points with black streaks between them beyond it on costa; the postmedial area with green fascias below costa, in discal and submedian folds and on inner margin; subterminal line grey defined on inner side by dentate black marks, excurved and minutely waved below vein 7 and at middle; the terminal area suffused with green; a terminal series of black lunules defined by grey on inner side; cilia fuscous and grey with a blackish line through them. Hind wing fuscous brown with an ochreous and greyish tinge, the terminal area black, leaving some ochreous white on termen; cilia whitish; the underside grey tinged with brown and irrorated with fuscous, the terminal area black with some whitish on termen, a pale discoidal bar defined on each side by diffused black, traces of a diffused postmedial line oblique from costa to vein 5.

Hab. E. Siberia, Ussuri, Kasakewitsch in Coll. Püngeler. *Exp.* 44 millim.

Genus **HYPOPLEXIA**, nov.

Type, *H. algoa.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and fringed with hair in front, the 3rd short and roughly scaled; frons smooth; eyes large, rounded; head and thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibiæ fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle: 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate, with short branches to apex.

3264. **Hypoplexia conjuncta**, n. sp.

♂. Head and thorax brown, the hairs tipped with grey, the patagia pinkish towards outer edge, the metathoracic crest pinkish; tarsi blackish ringed with white; abdomen fuscous brown, the anal tuft and ventral surface ochreous. Fore wing pale purplish pink, the antemedial and medial areas tinged with brown; the median nervure and veins 4, 3, 2, 1 on medial area streaked with whitish; subbasal line indistinctly double, angled outwards on median nervure and ending at vein 1; a blackish mark on inner area near base with some grey above it; antemedial line double, slightly sinuous, angled inwards below costa and to inner margin; claviform small defined by black; orbicular and reniform defined by black, the former tinged with pink, oblique elliptical and

connected with an elongate mark below cell, the latter yellowish, its centre slightly defined by brown, angled inwards on median nervure to the mark below cell; traces of a curved medial line; postmedial line black defined by pinkish on outer side, double at costa, slightly bent outwards below costa, oblique to vein 5, then inwardly oblique, with minute black streaks beyond it on the veins; subterminal line whitish slightly defined on inner side by brown

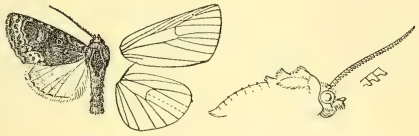


Fig. 72.—*Hypoplexia conjuncta*, ♂. ½.

and with dentate black marks before it at middle, dentate between veins 7 and 2; a terminal series of small black lunules; cilia reddish at base, chequered ochreous white and fuscous at tips. Hind wing ochreous white, the inner area tinged with brown, a minutely crenulate postmedial line, diffused subterminal band, and dark terminal line; cilia with a brown line through them; the underside white, the costal area irrorated with brown, a black discoidal spot and crenulate postmedial line.

Hab. Cape Colony, Deelfontein (*Sloggett*), 1 ♂ type. *Exp.* 34 millim.

Sect. II. Antennæ of male uniserrate.

3265. Hypoplexia algoa.

Hadena algoa, Feld. Reis. Nov. pl. 109. f. 21 (1874).

♂. Head whitish and fuscous; thorax pinkish mixed with blue-black; pectus and legs fuscous, the tarsi ringed with white; abdomen whitish suffused with fuscous, the dorsal crest black.

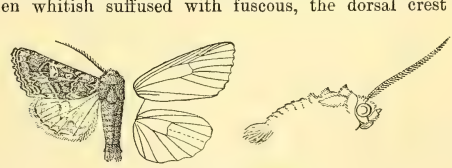


Fig. 73.—*Hypoplexia algoa*, ♂. ½.

Fore wing pinkish irrorated with black and largely suffused with fuscous and blue-black especially on medial and terminal areas; subbasal line represented by black striæ from costa and cell; antemedial line defined by pinkish on inner side, oblique, waved;

claviform slightly defined by black; orbicular and reniform defined by black, the former with black centre and pinkish annulus, round, the latter with blue-black centre, constricted at middle and with blackish streaks beyond it in the interspaces; an indistinct sinuous medial line; postmedial line indistinctly double, filled in with pinkish and defined by pinkish on outer side, bent outwards below costa, then minutely waved, incurved below vein 4, some whitish points beyond it on costa; subterminal line pink defined by brown on inner side, somewhat irregularly dentate, interrupted; a terminal series of small black lunules. Hind wing yellowish white, the costal and terminal areas irrorated with brown, a small discoidal spot, slight curved postmedial line and fine dark terminal line; cilia chequered white and brownish; the underside with the costal area irrorated with fuscous, a black discoidal spot, and curved postmedial line.

Hab. TRANSVAAL, White R. (*Cooke*), 1 ♂; ZULULAND, Lr. Tugela R. (*Reynolds*), 1 ♂; NATAL, Durban (*Bowker*), 1 ♂; CAPE COLONY, Knysna. *Exp.* 32 millim.

SECT. III. Antennæ of male ciliated.

3266. Hypoplexia externa.

Hadena externa, Wlk. xi. 756 (1857).

♂. Head and thorax red-brown mixed with some grey; tegulæ pale at base and with black medial line; patagia edged with black; tibiæ and tarsi ringed with black; abdomen ochreous suffused with rufous, the basal crest black at tip. Fore wing whitish suffused with rufous and slightly irrorated with fuscous; subbasal line represented by double black striæ from costa; a black streak in submedian fold from base to the antemedial line, which is oblique, double at costa and angled inwards in submedian fold and on vein 1;

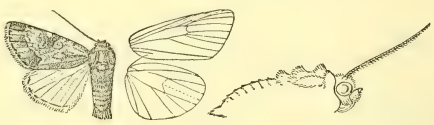


Fig. 74.—*Hypoplexia externa*, ♂. ½.

claviform greyish defined by black at extremity; orbicular and reniform grey-white defined by black and with some rufous and fuscous irroration in centres, the former round; a diffused blackish bar from costa to orbicular and traces of a dentate line from cell to inner margin; postmedial line double filled in with whitish, the inner line indistinct, the outer strong, black, bent outwards below costa almost to subterminal line, then minutely dentate, oblique and slightly curved, strongly angled inwards in submedian fold, a

black streak beyond it in discal fold to just before termen and some whitish points on costa; subterminal line whitish, minutely dentate, angled inwards in submedian fold, with slight dark streaks beyond it in the interspaces to the terminal series of small black lunules; cilia with fine brown line near base and the tips intersected with black. Hind wing pure white with terminal series of black striæ except towards tornus; cilia slightly tinged with rufous and with a few black scales at tips at submedian fold; the underside with the costal area irrorated with brown, a blackish discoidal spot and diffused curved postmedial line from costa to vein 2.

Hab. Cape Colony (*Sir A. Smith*), 1 ♂ type, Annshaw (*Miss F. Barrett*), 2 ♂. *Exp.* 32 millim.

Genus HERÆMA.

	Type.
Heræma, Staud. Rom. Mém. vi. p. 501 (1892)	*mandschurica.*

Proboscis fully developed; palpi obliquely porrect, fringed with scales below; frons smooth; eyes large, rounded; antennæ of male ciliated; head and thorax clothed with hair and hair-like scales, the pro- and metathorax with spreading crests; tibiæ fringed with hair; abdomen with dorsal crest at base only. Fore wing rather broad, the termen not crenulate, rather oblique towards tornus; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

*3267. Heræma mandschurica.

Pachnobia mandschurica, Græs. Berl. ent. Zeit. 1889, p. 256; Staud. Cat. Lep. pal. p. 202.

Head and thorax deep red-brown; abdomen pale rufous. Fore wing pale red-brown with a greyish tinge; the medial area, postmedial costal area and terminal area deep red-brown; subbasal

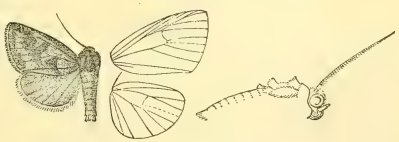


Fig. 75.—*Heræma mandschurica*, ♂. ½.

line indistinct, dark, sinuous, from costa to vein 1; antemedial line dark, sinuous, oblique, slightly angled outwards below costa and inwards on vein 1, a diffused oblique wedge-shaped greyish band from beyond it on costa to postmedial line at submedian fold; claviform, orbicular, and reniform obsolete; postmedial line rather indistinct, dark, bent outwards below costa, then minutely dentate, excurved to vein 4, then very oblique, three white points beyond it

on costa; subterminal line represented by an oblique white bar from costa, then by the contrast between the greyish postmedial and dark terminal areas, angled outwards at vein 7, excurved at middle, then incurved; a fine dark terminal line; cilia red-brown. Hind wing pale red-brown; cilia whitish with a brown line through them; the underside whitish suffused and irrorated with brown especially on costal area and terminal half, a small discoidal spot and diffused curved postmedial line.

Hab. E. Siberia, Amurland, Radevko in Coll. Püngeler. *Exp.* 34 millim.

Genus TÆNIOSEA.

Type,

Tæniosea, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 143 (1874) ... *discivaria.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to vertex of head and moderately fringed with hair in front, the 3rd moderate, porrect; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed with hair and hair-like scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; build slender; abdomen with dorsal crest at base only. Fore wing with the apex rectangular, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3268. Tæniosea discivaria.

Bryophila discivaria, Wlk. ix. 27 (1856); Smith, Cat. Noct. N. Am. p. 217.
Tæniosea gentilis, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 143 (1874).
Tæniosea perbellis, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 144 (1874).

Head and thorax red-brown mixed with grey; palpi fuscous at sides; antennæ ringed with white towards base; tarsi fuscous ringed with white; abdomen grey mixed with fuscous, the anal tuft brownish. Fore wing grey suffused with purplish red, except on inner area, to postmedial line and at costa to subterminal line, and irrorated with fuscous; subbasal line indistinct, double filled

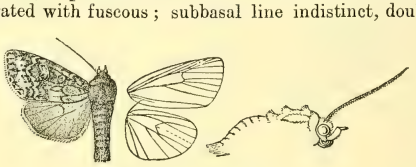


Fig. 76.—*Tæniosea discivaria*, ♂. ½.

in with greyish, waved, from costa to vein 1; antemedial line double, oblique, waved; claviform small, slightly defined by brown; orbicular and reniform greyish irrorated with red and with pale annuli defined by fuscous, the former irregularly rounded, small, the latter constricted at middle and with its lower part filled in with fuscous; a diffused incurved red shade from lower angle of cell to inner

margin; postmedial line double filled in with grey, bent outwards below costa, then minutely dentate and produced to double black points on the veins, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line indistinct, pale, faintly defined by brown on inner side, oblique towards costa, then minutely waved, angled outwards at vein 7 and excurved at middle, the area beyond it suffused with reddish except at apex; a terminal series of minute black lunules; cilia pale at base, brown at tips. Hind wing grey suffused with brown; cilia pale with a brown line through them; the underside grey-white irrorated with brown, a fuscous discoidal lunule and trace of a curved postmedial line.

Ab. 1. *perbellis*. Fore wing uniformly suffused with grey-brown and rufous without the pale grey on inner and postmedial areas.

Hab. Canada, St. Martin's Falls, Albany R. (*Barnston*), 1 ♀ type, New Brunswick (*Mrs. Nicholl*), 1 ♀, (*Norman*), 1 ♂, Ontario, Ottawa (*Saunders*), 1 ♀, Alberta, Calgary (*Wolley-Dod*), 4 ♂, 7 ♀; U.S.A., Northern, Eastern, Middle and Central States, New York, Evans Center (*Grote*), 1 ♂, 3 ♀, types *gentilis* and *perbellis*, Lewis Co. (*Hill*), 1 ♂. *Exp.* 32–34 millim.

Genus MACRONOCTUA.

	Type.
Macronoctua, Grote, 6th Rept. Peab. Ac. Sci. p. 27 (1874)	*onusta*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and fringed with long hair in front, the 3rd short; frons smooth with tuft of hair; eyes large, round; antennæ of female ciliated; thorax clothed with scales and hair mixed, the prothorax with sharp triangular crest, the metathorax with divided crest; tibiæ moderately fringed with hair; abdomen with some rough hair at base and dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and strongly crenulate; the cell clothed with long hair on underside; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10, anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3269. Macronoctua onusta.

Macronoctua onusta, Grote, 6th Rept. Peab. Ac. Sci. p. 27 (1874); Smith, Cat. Noct. N. Am. p. 163.

♀. Head and thorax fuscous black irrorated with a few white scales; abdomen greyish suffused with fuscous black, the dorsum paler except at extremity and with fine dorsal black streak. Fore wing ochreous suffused with red-brown, the base, costal and terminal areas suffused with fuscous black; subbasal line represented by a black striga from costa and point below cell; antemedial line slight, double, obsolete from below costa to median nervure, angled outwards in submedian fold and strongly above inner margin, angled inwards on vein 1; claviform minute, defined by black; orbicular elongate elliptical, defined by black; reniform very large, defined by black, strongly below, strongly angled inwards on median nervure; an indistinct diffused curved medial line; postmedial line double,

the outer line very indistinct, obsolete towards costa, then oblique, strongly dentate to vein 3, then less strongly; traces of a pale waved subterminal line slightly defined by brown on inner side, excurved below vein 7 and at middle; a terminal series of small

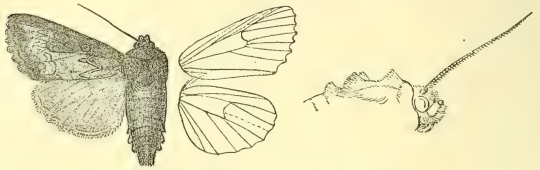


Fig. 77.—*Macronoctua onusta*, ♀. ½.

black lunules. Hind wing greyish tinged with fuscous brown, the terminal area broadly suffused with fuscous; a waved blackish terminal line; a pale line at base of cilia; the underside whitish, the costal area fuscous irrorated with white, the terminal area irrorated with fuscous, a slight discoidal spot and curved postmedial line slightly incurved at discal fold.

Hab. Canada, Ottawa (*Gibson*), 2 ♀; U.S.A., Maine, New York, New Jersey, Illinois, 1 ♀ type, Iowa. *Exp.* 34–66 millim.

Larva. Head bilobed, dark brown, rough. Body cylindrical, translucent, sordid whitish, reddish shaded over the back. Cervical shield and anal plate large, pale brown; spiracles black.

Food-plant, roots of lily; borer.—H. G. D.

Genus **MONOPTYA**, nov.

Type, *M. leucobasis.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching to about vertex of head and moderately scaled, the 3rd rather long; frons smooth; eyes large, rounded; antennæ of female almost simple; head and thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing broad, the apex rounded, the termen slightly waved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3270. **Monoptya leucobasis.**

Euplexia leucobasis, Hmpsn. A. M. N. H. (7) xiv. p. 167 (1904).

♀. Head pale rufous and whitish mixed with some black; thorax fuscous black with some rufous and whitish on tegulæ and vertex; pectus and legs black mixed with rufous and whitish, the tarsi with whitish rings; abdomen fuscous mixed with some whitish. Fore wing black glossed with leaden grey, the lines single, black; subbasal line slightly angled outwards below costa, at submedian fold connected with a streak from base; some black irroration on

inner margin before the antemedial line, which is slightly angled outwards below costa and in cell and strongly in submedian fold, then oblique, sinuous; claviform defined by black, acute at extremity; orbicular defined by black, oblique elliptical; reniform very indistinctly and partially defined by black; medial line oblique and sinuous from costa to lower angle of cell, then angled inwards in submedian fold; postmedial line bent outwards below costa, slightly

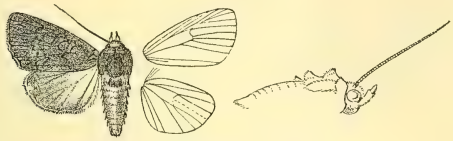


Fig. 78.—*Monoptya leucobasis*, ♀. ½.

incurved at discal fold, then oblique, minutely waved and angled inwards in submedian fold, crossed by black streaks in the interspaces from vein 6 to below 2 extending to termen; subterminal line represented by a series of slight dentate black marks; some pale points on apical part of termen; a terminal series of slight black lunules. Hind wing fuscous black, the basal and inner area to beyond middle white; a fine pale line at base of cilia; the underside with the dark areas slightly irrorated with white.

Hab. Bahamas, Abaco (*Bonhote*), 2 ♀ type. *Exp.* 36 millim.

Genus **RHYNCHOPLEXIA**, nov.

Type, *R. rubra*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint fringed with long hair in front, the 3rd long, naked, porrect; frons smooth with tuft of hair; eyes large, rounded; antennæ of male ciliated; head and thorax clothed with hair and hair-like scales, the pro- and metathorax with spreading crests; tibiæ fringed with hair; abdomen with dorsal crest at base only. Fore wing with the termen crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing purplish red, the reniform defined by white marks on outer side ..... *rubra*.
B. Fore wing fuscous brown, the reniform not defined by white marks on outer side ..... *griseimarginata*.

3271. Rhynchoplexia rubra.

Ancara rubra, Hmpsn. Moths Ind. ii. p. 225 (1894).

♂. Head and thorax bright purplish rufous; sides of palpi and frons dark brown; tibiæ and tarsi dark brown ringed with ochreous; abdomen brown, whitish at base, the anal tuft ochreous, the ventral surface rufous. Fore wing bright purplish rufous sparsely irrorated

with black, the veins dark brown irrorated with a few white scales; subbasal line double, waved, from costa to submedian fold; antemedial line double, oblique, waved; claviform small, defined by black; orbicular and reniform incompletely defined by black, the former round, the latter with white points and striga on outer edge; a curved, waved medial line; postmedial line double, bent

Fig. 79.—*Rhynchoplexia rubra*, ♂. ½.

outwards below costa, then dentate, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line pale defined on inner side by somewhat dentate dark marks, angled outwards at vein 7 and excurved at middle; a waved black terminal line; cilia with a fine pale line at base. Hind wing pale nearly uniformly suffused with dark brown, the base rather paler, some ochreous on termen between veins 2 and 1; cilia ochreous with a brown line through them; the underside ochreous irrorated with dark brown, a blackish discoidal spot, sinuous postmedial line and indistinct diffused subterminal band.

Hab. Sikhim (*Möller*), 1 ♂ type. *Exp.* 44 millim.

3272. **Rhynchoplexia griseimarginata.** (Plate CXIII. fig. 26.)

Eurois griseimarginata, Hmpsn. Moths Ind. ii. p. 229 (1894).

♀. Head and thorax fuscous brown mixed with grey and slightly tinged with flesh-colour; tegulæ with slight dark medial line; tarsi ringed with white; abdomen fuscous brown mixed with grey, the ventral surface with some ochreous towards extremity. Fore wing fuscous brown with a cupreous gloss and irrorated with grey; subbasal line indistinct, double and filled in with ochreous at costa, waved, from costa to vein 1, with a white point beyond it in cell; antemedial line double, filled in with some ochreous, oblique, waved, angled inwards on vein 1; orbicular and reniform with incomplete ochreous annuli with some white scales on them and defined by black, the former round, the latter irregular, open above; an indistinct sinuous medial line, oblique from costa to median nervure; postmedial line double filled in with ochreous, bent outwards below costa, then dentate, incurved below vein 4, some white points beyond it on costa; subterminal line represented by a series of slight ochreous and whitish marks defined on inner side by slight dentate black marks, excurved at veins 7, 6, 4, 3; a fine black terminal line with white points at the veins; cilia with slight ochreous lines at base and middle. Hind wing yellowish brown,

the terminal area rather darker; cilia ochreous, with a diffused brown line through them. Underside of fore wing with the terminal area grey-white with a diffused dark band before it; hind wing pale irrorated with brown and white scales, a sinuous postmedial line from costa to vein 2, a diffused dark subterminal band, the termen whitish.

Hab. Punjab, Dalhousie (*Harford*), 1 ♀ type. *Exp.* 48 millim.

Genus **SIDEMIA.**

Type,

Sidemia, Staud. Rom. Mém. vi. p. 459 (1892) ..... *speciosa.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and fringed with hair in front; frons smooth; eyes large, round; head and thorax clothed with hair and hair-like scales, the pro- and metathorax with spreading crests; tibiæ slightly fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rather produced, the termen obliquely curved and crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with rather long branches, the apex ciliated.

A. Fore wing fuscous brown tinged with grey ..... *christophi.*
B. Fore wing ochreous white tinged with brown.
a. Hind wing white with fine terminal brown line ..... *inutilis.*
b. Hind wing with the terminal area suffused with brown ... *depravata.*

3273. Sidemia christophi.

Hadena christophi, Alph. Stett. ent. Zeit. 1888, p. 68; id. Rom. Mém. v. p. 236, pl. 12. ff. 2, *a*, *b*; Staud. Cat. Lep. pal. p. 171.

♂. Head and thorax dark brown mixed with grey; antennæ brownish white except at base and with brownish tufts of hair from basal joint, patagia with some black scales near upper edge; pectus

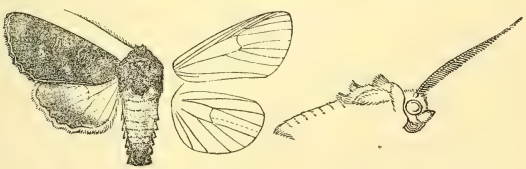


Fig. 80.—*Sidemia christophi*, ♂. ½.

with whitish hair; tarsi ringed with white; abdomen ochreous white suffused with dark brown towards extremity, the lateral and anal tufts brown, the ventral surface irrorated with brown, some pure white hair at base and the dorsal crest dark. Fore wing fuscous brown suffused with grey, especially on medial and terminal

areas, the basal and postmedial areas with a slight olive-green tinge; subbasal line indistinct, double, waved, from costa to vein 1; antemedial line double, minutely waved, oblique from costa to submedian fold; claviform indicated by brown at extremity and with greenish tinge beyond it; orbicular and reniform with yellowish-white annuli except below, slightly defined by brown, the former erect elliptical; a waved medial line oblique from costa to median nervure; postmedial line double, strongly bent outwards below costa, then dentate, incurved below vein 4, some prominent white points beyond it on costa; subterminal line indistinct, pale, slightly defined on each side by brown, dentate, angled outwards at vein 7 and somewhat excurved at middle; a terminal series of small black lunules; cilia fuscous and whitish with a dark line near base; cilia of inner margin white with some black scales. Hind wing white, the veins tinged with brown, the terminal area fuscous brown, broadly at costa, narrowing to tornus; cilia white, tinged with brown at base except towards tornus; the underside with the costal and terminal areas irrorated with brown, a rather darker patch at apex.

Hab. S. Russia, Sarepta, 1 ♂; Siberia; E. Siberia, Ussuri. *Exp.* 50 millim.

3274. Sidemia inutilis.

Luperina inutilis, Alph. Rom. Mém. ix. p. 171, pl. 12. f. 10 (1897).

♂. Head and thorax whitish mixed with brown; palpi with fuscous marks at sides of 1st and 2nd joints; tegulæ with faint diffused dark medial line; abdomen whitish tinged with brown, the ventral surface with fuscous. Fore wing whitish tinged and irrorated with brown, the area from end of cell to termen at apex and vein 2 suffused with fuscous, the median nervure and veins rising from it and vein 1 streaked with white to beyond postmedial line; subbasal line represented by a slight dark striga from costa, and oblique line from median nervure to vein 1; antemedial line represented by a faint striga from costa and double line from cell to inner margin, excurved below the cell, then incurved, claviform narrow and elongate, whitish defined by fuscous and with fuscous streak in centre; orbicular wedge-shaped, whitish defined by fuscous; reniform with fuscous centre and whitish annulus defined by fuscous; traces of a waved dark line from lower angle of cell to inner margin; postmedial line double filled in with whitish, bent outwards below costa, then minutely waved, incurved at discal fold and below vein 4, some slight whitish points beyond it on costa; subterminal line indistinct, pale, defined on inner side by dentate black marks at middle, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules; cilia brownish white intersected with fuscous. Hind wing white, the costal and apical areas tinged with fuscous brown; a terminal series of slight dark points from apex to vein 2; the underside with the costal area

tinged with brown and irrorated with fuscous, a slight blackish mark at apex.

Hab. Corea, 1 ♂. *Exp.* 40 millim.

3275. Sidemia depravata. (Plate CXVIII. fig. 29.)

Agrotis depravata, Butl. A. M. N. H. (5) iv. p. 360 (1879).

Head, thorax, and abdomen ochreous slightly tinged with rufous. Fore wing ochreous slightly tinged with brown and with some dark brown irroration in parts; median nervure and the veins rising from it with whitish streaks; subbasal line represented by slight blackish marks below costa and cell; antemedial line waved, angled outwards in submedian interspace and inward on the veins; orbicular and reniform indistinctly and incompletely defined by blackish, the former small, round, the latter with dark centre; postmedial line indistinct, double, interrupted in places, bent outwards below costa, incurved in discal fold to reniform, then minutely waved and incurved below vein 4, a dark streak before it below vein 2 and some white points beyond it on costa; subterminal line indistinct, whitish, defined on inner side by brown and by brown suffusion on costal area and at middle, minutely dentate, excurved below vein 7 and at middle, then incurved; a terminal series of small black lunules defined by slight whitish lunules; cilia brownish ochreous. Hind wing ochreous white; the veins brownish; the terminal area broadly suffused with brown; cilia white; the underside with the costal area slightly irrorated with brown, a small discoidal spot and terminal series of small black lunules.

Hab. Japan, Tokio (*Maries*), 1 ♂, Yokohama (*Jonas, Pryer*), 7 ♂, 5 ♀, type. *Exp.* 28–36 millim.

Sect. II. Antennæ of male serrate.

3276. Sidemia spodopterodes, n. sp.

♂. Head and thorax purplish grey mixed with brown; a brown band between antennæ defined by whitish behind; tegulæ with slight brown lines at middle and tips; prothorax with brown line;

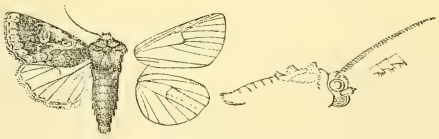


Fig. 81.—*Sidemia spodopterodes*, ♂. ½.

tarsi ringed with white; abdomen whitish suffused with brown. Fore wing purplish grey irrorated with brown; the basal area suffused with brown extending in submedian interspace to beyond

antemedial line, the cell with black patch between the stigmata, black-brown suffusion below end of cell and beyond the cell to subterminal line from costa to vein 2; subbasal line represented by slight dark marks below costa and cell; antemedial line blackish slightly defined by grey on inner side, oblique from costa to submedian fold, then slightly waved; claviform large, black; orbicular and reniform grey slightly defined by black and with brownish centres, the former irregularly rounded, the latter elliptical; a slight blackish spot on middle of costa; postmedial line blackish slightly defined by grey on outer side, minutely waved, excurved from costa to vein 4, then oblique, some white points beyond it on costa; subterminal line whitish, slightly angled outwards at vein 7, then minutely waved, excurved to vein 3, then slightly incurved; a terminal series of slight black lunules; cilia brownish grey with brown line near base. Hind wing white slightly tinged with brown in parts, the veins brown; a fine waved brown terminal line; cilia with a brown line through them except towards tornus; the underside with the costal area irrorated with brown, a small discoidal lunule and postmedial line from costa to vein 6.

Hab. Transvaal, White R. (*A. T. Cooke*), 1 ♂ type. *Exp.* 36 millim.

Sect. III. Antennæ of male with long fasciculate cilia; palpi with the 3rd joint long.

3277. Sidemia contecta.

Dyschorista contecta, Græs. Berl. ent. Zeit. 1892, p. 310; Staud. Cat. Lep. pal. p. 205.

♂. Head and thorax ochreous white mixed with reddish brown; palpi and lower part of frons white, the former with fuscous marks at sides; antennæ white; pectus and legs white, the fore and mid

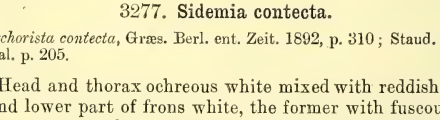


Fig. 82.—*Sidemia contecta*, ♂. ½.

tibiæ and the tarsi banded with pale fuscous; abdomen white slightly tinged with brown. Fore wing ochreous white slightly tinged with rufous and irrorated with brown; subbasal line indistinct, dark, angled outwards in cell and ending at submedian fold; antemedial line rather strong, blackish, almost evenly curved, not reaching inner margin; orbicular a small whitish lunule defined by black, concave towards base; reniform narrow, with brown centre and white annulus defined by black; a diffused medial line oblique from costa to lower angle of cell; the veins beyond the cell slightly

streaked with black to the subterminal line; postmedial line fine, blackish, oblique from costa to vein 6, then inwardly oblique; subterminal line white, rather diffused and somewhat dentate, slightly angled outwards at vein 7 and excurved at middle; a terminal series of black striæ. Hind wing white tinged with brown especially on the veins and terminal area; a waved blackish terminal line slightly defined by white on inner side; cilia white; the underside white, the costal area slightly irrorated with brown, a faint discoidal lunule and traces of a postmedial line with minute black streaks on the veins.

♀. Abdomen strongly tinged with brown; fore wing much browner; hind wing browner.

Hab. W. Turkestan, Alexander Mts., 1 ♂, 1 ♀, Issyk-Kul. *Exp.* 36 millim.

Sect. IV. Antennæ of male minutely ciliated; palpi with the 3rd joint short.

A. Mid tibiæ of male with thick fringe of very long hair below, hind tibiæ with tufts of long hair at medial spurs and extremity; abdomen with lateral fringes of long hair on basal segments meeting ventrally.
  a. Fore wing with the claviform small, defined by black.
    *a*¹. Hind wing wholly suffused with brown ..... *effusoides.*
    *b*¹. Hind wing whitish, the terminal area suffused with fuscous ..... *calidipes.*
  b. Fore wing with the claviform absent ..... *hipparion.*

3278. Sidemia effusoides. (Plate CXVIII. fig. 30.)

Amphipyra effusoides, Dogn. Ann. Soc. Ent. Belg. xli. p. 415 (1897).

Head and thorax grey-brown mixed with black; palpi blackish; tarsi blackish with pale rings; abdomen grey-brown tinged with fuscous, the anal tuft pale rufous. Fore wing grey-brown slightly irrorated with fuscous; a double waved subbasal line from costa to submedian fold, with blackish streak below the cell between it and the oblique double waved antemedial line; claviform small, indistinct, blackish; orbicular rounded, defined by black, open above; reniform blackish, somewhat quadrate; a slight waved medial shade, oblique from costa to lower angle of cell, then inwardly oblique; a double minutely dentate postmedial line bent outwards below costa, excurved to vein 4, then oblique; the subterminal line represented by a series of pale points with small wedge-shaped black marks on their inner sides, those above veins 5 and 4 extending to postmedial line; some pale points on costa towards apex; a terminal series of small black spots; cilia with a blackish line through them. Hind wing fuscous brown, rather paler towards base; cilia whitish with a fuscous line except towards tornus; the underside whitish, the costal area irrorated with brown, the terminal area suffused with fuscous except towards tornus, a dark discoidal point and sinuous postmedial line.

Hab. Ecuador, Loja, type † ♀ in Coll. Dognin; Peru, Angasmarca, 1 ♂. *Exp.* 44 millim.

3279. Sidemia calidipes.

Mamestra calidipes, Guen. Noct. i. p. 189 (1852).

Head and thorax rufous slightly mixed with fuscous; palpi blackish at sides; frons with slight black lateral bars; tegulæ with slight black medial line; tarsi black with pale rings; abdomen grey-brown, the fringes on ventral surface of male pale rufous. Fore wing greyish slightly suffused with rufous; subbasal line

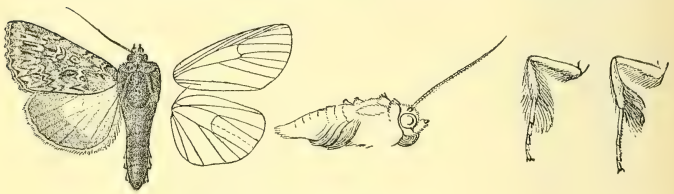


Fig. 83.—*Sidemia calidipes*, ♂. $\frac{1}{1}$.

indistinctly double, curved; a slight black streak below the cell to the antemedial line, which is indistinctly double, dentate, angled inwards on vein 1; claviform small, defined by black; orbicular and reniform small, indistinctly defined by brown, the former elongate elliptical, the latter with slight brown lunule in centre and short black streak from it to postmedial line; an indistinct waved medial line; postmedial line defined by whitish on outer side, double at costa, bent outwards below costa, then dentate and produced to black and white points on the veins, excurved to vein 4, then incurved, some whitish points beyond it on costa; subterminal line represented by a curved series of minute whitish lunules, defined on inner side by slight dentate black marks; a terminal series of small triangular black marks; cilia fuscous intersected with whitish, a punctiform whitish line at base and slight whitish line at middle. Hind wing yellowish white, the terminal area suffused with fuscous narrowing to tornus; cilia yellowish white with a slight dark line through them except towards tornus; the underside with the costa irrorated with brown, a dark postmedial line from costa to vein 6 and subterminal band diffused to termen at apex.

Hab. Brazil, Bahia, Cachimbo (*Pujol*), 1 ♂, Organ Mts., Tijuca (*Wagner*), 2 ♀; Paraguay, Sapucay (*Foster*), 4 ♀. *Exp.* 44–52 millim.

3280. Sidemia hipparion.

Mamestra hipparion, Druce, Biol. Centr.-Am., Het. i. p. 273, pl. 26. f. 24 (1889).

Head and thorax rufous; palpi blackish at sides; tarsi blackish

with pale rings; abdomen rufous dorsally suffused with fuscous except at base and extremity. Fore wing reddish ochreous suffused with fuscous in and below cell, beyond lower angle and on terminal area; subbasal line represented by very indistinct short blackish streaks; a slight black streak below base of cell to the antemedial line, which is indistinct, double filled in with ochreous, waved, oblique to submedian fold, then excurved; claviform absent; orbicular and reniform small, reddish ochreous defined by fuscous, the former elongate elliptical, the latter with its lower part filled in with blackish and slight black streak from it to postmedial line; an indistinct waved medial line; postmedial line slightly defined by ochreous on outer side, bent outwards below costa, then dentate and produced to black and white points on the veins, excurved to vein 4, then oblique, some pale points beyond it on costa; subterminal line represented by a series of slight pale marks defined on inner side by minute dentate black marks, somewhat excurved below vein 7 and at middle; a terminal series of small black lunules; cilia ochreous and fuscous with a fine pale line at base. Hind wing whitish tinged with brown, the terminal area suffused with brown narrowing to tornus; cilia whitish with a slight dark line through them except towards tornus; the underside white tinged with brown, the costal area irrorated with brown, a dark postmedial striga from costa, a dark subterminal band from costa to submedian fold, diffused to termen at apex.

Hab. Costa Rica, Irazu (*Rogers*), 1 ♂, 1 ♀ type, Rio Sucio (*Rogers*), 1 ♀, Candelaria Mts. (*Underwood*), 3 ♂, Godman-Salvin Coll. *Exp.* 42 millim.

B. Tibiæ and abdomen of male normal.
- *a.* Fore wing with the postmedial line defined on outer side by a distinct whitish band and not dentate ..... *speciosa.*
- *b.* Fore wing with the postmedial line not defined on outer side by a distinct whitish band and more or less dentate.
  - a^1. Fore wing with the postmedial line oblique below vein 5.
    - a^2. Fore wing without black streak from claviform to postmedial line ..... *subornata.*
    - b^2. Fore wing with black streak from claviform to postmedial line ..... *longula.*
  - b^1. Fore wing with the postmedial line excurved to vein 4, then incurved or oblique.
    - a^2. Fore wing with the terminal area paler than the ground-colour ..... *judaica.*
    - b^2. Fore wing with the terminal area concolorous.
      - a^3. Fore wing with distinct pale subterminal line.
        - a^4. Fore wing with the ground-colour red-brown.
          - a^5. Fore wing with the subterminal line not defined on inner side by dentate dark marks ..... *plebeja.*
          - b^5. Fore wing with the subterminal line defined on inner side by slight dentate dark marks..... *fissipuncta.*

b^4. Fore wing with the ground-colour grey-brown ..... *devastatrix.*
b^3. Fore wing with the subterminal line indistinct.
a^4. Fore wing with the ground-colour bluish grey ..... *standfussi.*
b^4. Fore wing with the ground-colour grey-white ..... *zollicoferi.*

3281. Sidemia speciosa.

Noctua speciosa, Brem. Lep. Ost-Sib. p. 50, pl. 4. f. 10 (1864); Staud. Cat. Lep. pal. p. 171.
Agrotis bremeri, Ersch. Trudy Russ. Entom. Obs. iv. pp. 152, 194 (1867).
Sidemia snelleni, Staud. Rom. Mém. vi. p. 459, pl. 7. f. 8 (1892).

Head and thorax grey mixed with brown; sides of palpi and frons reddish brown; patagia edged with brown on outer side; metathoracic crest with some black-tipped scales; pectus and legs reddish brown, the tarsi with pale rings; abdomen grey tinged with brown, the ventral surface and anal tuft darker brown. Fore wing grey suffused with brown except at base and on costal area to postmedial line; subbasal line indistinct, double filled in with grey, obliquely curved, from costa to vein 1; a dark brown patch below the cell before the antemedial line, which is double filled in with white, angled outwards below costa, then retracted

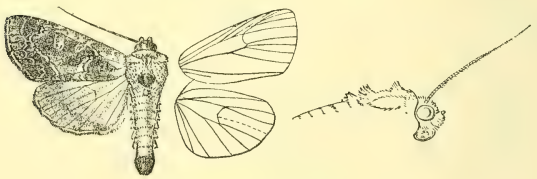


Fig. 84.—*Sidemia speciosa*, ♂. ½.

and obsolescent to median nervure, then strong, obliquely excurved and slightly incurved at vein 1, defined by grey on outer side towards inner margin; claviform indistinctly defined by blackish at extremity; orbicular and reniform pale brown with whitish annuli defined by black, open above and below and rather quadrate; postmedial line defined by white on outer side, bent outwards below costa, strongly excurved below vein 7, oblique and slightly incurved below vein 4, some white points beyond it on costa; subterminal line whitish with slight brown marks before it below costa and at middle, excurved below vein 7, excurved at middle and somewhat dentate at veins 4, 3; the termen somewhat greyer with a series of minute dark lunules; cilia dark brown. Hind wing grey suffused with brown, the basal and inner areas rather paler; traces of a

curved postmedial line ; cilia whitish towards tornus ; the underside with the postmedial line more distinct and sinuous, traces of a diffused subterminal band.

Hab. E. Siberia, Amurland, Ussuri, 2 ♂ ; Japan, Yesso (*Pryer*), 1 ♀. *Exp.* 40–52 millim.

3282. Sidemia subornata. (Plate CXVIII. fig. 31.)

Hadena subornata, Staud. Iris, ix. p. 262 (1896) ; id. Iris, xii. p. 342, pl. 7. f. 11 ; id. Cat. Lep. pal. p. 174.

♂. Head and tegulæ pale rufous; thorax grey tinged with rufous and brown ; abdomen grey tinged with fulvous. Fore wing grey-white slightly tinged with rufous, the costal area to subterminal line and the medial area to just below cell suffused with purplish grey, rufous and some dark brown ; subbasal line represented by dark striæ from costa and cell; antemedial line dark, defined by whitish on inner side towards costa, angled outwards below costa and in submedian fold and inwards on vein 1 ; claviform small, defined by diffused brown; orbicular and reniform with white annuli defined by brown, the former with pale rufous centre, small, oblique elliptical, the latter constricted at middle and somewhat produced at lower extremity ; traces of a curved medial line ; postmedial line dark defined by whitish on outer side towards costa, bent outwards below costa, oblique to vein 6, then inwardly oblique and minutely dentate; subterminal line indistinct, pale, slightly defined by brown on inner side, excurved below vein 7 and at middle, the area beyond it suffused with brown except at apex ; a terminal series of small black lunules ; cilia pale rufous. Hind wing greyish ochreous suffused with brown except at termen ; traces of a discoidal spot, curved postmedial line, and diffused subterminal band; the underside brownish white with small discoidal spot and curved postmedial line.

Hab. W. Siberia, Altai ; E. Turkestan, Thian-Schan Mts. ; Mongolia, Uliassutai, Urga, 1 ♂. *Exp.* 50 millim.

3283. Sidemia longula. (Plate CXVIII. fig. 32.)

Hadena longula, Grote, Bull. U.S. Geog. Geol. Surv. Terr. v. p. 204 (1879); Smith, Cat. Noct. N. Am. p. 132.

♀. Head and thorax grey mixed with reddish brown ; frons with lateral black bars ; tegulæ with slight medial dark line ; patagia with black lines near edges ; tarsi blackish with pale rings ; abdomen grey tinged with brown and irrorated with fuscous. Fore wing grey-white thickly irrorated and suffused with brown ; a sinuous black streak below base of cell ; subbasal line represented by slight black striæ from costa and cell ; antemedial line black defined by whitish on inner side, angled outwards in the interspaces

and inwards on the veins, somewhat oblique; claviform moderate, defined by black and with strong black streak below and beyond it to postmedial line; orbicular and reniform with slight whitish annuli defined by black, the former very oblique elliptical, the latter angled inwards on median nervure; postmedial line defined by whitish on outer side, indistinct towards costa, bent outwards below costa, oblique to vein 5, then inwardly oblique and dentate, some white points beyond it on costa; subterminal line white, defined on inner side by dentate black marks at middle, angled outwards at vein 7 and dentate to near termen at veins 4, 3, the interspaces beyond it streaked with black at middle; a terminal series of small black lunules; cilia with a fine pale line at base. Hind wing whitish tinged with brown, the veins and terminal area suffused with brown; a slight discoidal lunule and curved postmedial line; a whitish mark on termen towards tornus; a dark terminal line; cilia whitish with a brown line through them; the underside whitish, the costal and terminal areas irrorated with brown, a discoidal spot and sinuous postmedial line.

Hab. U.S.A., Kansas, Washington, Colorado, Nevada, 1 ♀ type, New Mexico. *Exp.* 50 millim.

3284. **Sidemia judaica.** (Plate CXIX. fig. 1.)

Apamea judaica, Staud. Iris, x. p. 282, pl. iv. f. 20 (1897); id. Cat. Lep. pal. p. 168.

♂. Head and thorax ochreous mixed with reddish brown; sides of palpi and frons with some black hairs; abdomen ochreous white tinged with reddish brown. Fore wing ochreous suffused with rufous, deepest before the subterminal line; subbasal line represented by two black points on costa; a slight black streak below base of cell; a slight blackish streak above inner margin before the antemedial line, which is indistinctly double with two black points at costa, excurved in submedian interspace and above inner margin; claviform absent; orbicular and reniform slightly paler, hardly traceable; medial line with diffused oblique black wedge-shaped mark from costa, then forming a black line on inner edge of reniform, then reddish brown, oblique; postmedial line black, double at costa, bent outwards below costa, then dentate and forming black points on the veins, excurved to vein 4, then oblique; subterminal line only defined by the contrast between the postmedial and pale terminal areas, angled outwards at vein 7 and dentate at veins 4, 3. Hind wing nearly pure white; the underside with the costal area irrorated with brown, a small black discoidal lunule.

♀. Hind wing with some fuscous irroration and lunulate postmedial black line.

Hab. Palestine, 1 ♂, 1 ♀. *Exp.* 34 millim.

*3285. Sidemia plebeja.

Dyschorista plebeja, Staud. Stett. ent. Zeit. 1888, p. 34; Alph. Rom. Mém. v. pp. 32, 172, pl. 7. f. 9; Staud. Cat. Lep. pal. p. 205.

♂. Head and thorax pale reddish brown mixed with grey; sides of palpi and frons fuscous; tarsi brown with pale rings; abdomen pale grey-brown. Fore wing pale brownish grey irrorated with fuscous, the end of cell and the area beyond and below its extremity and the postmedial area tinged with rufous, the terminal area with fuscous; the costal area to postmedial line and the inner area greyer; subbasal line represented by double black striæ from costa and one from cell with a fuscous tinge on costa beyond it; antemedial line double filled in with grey, oblique, waved; claviform represented by a faint pale mark defined by a few black scales; orbicular grey slightly defined by fuscous, its centre irrorated with fuscous, oblique elliptical, its lower extremity produced and almost confluent with the reniform which has a whitish annulus slightly defined by fuscous, its centre tinged with fuscous and its outer edge indistinct; a slight medial shade oblique from costa to just beyond lower angle of cell, then inwardly oblique; postmedial line indistinctly double filled in with grey, bent outwards below costa, then minutely dentate and produced to slight grey streaks on the veins, oblique below vein 4, some grey points beyond it on costa; subterminal line grey slightly defined by brown on inner side, somewhat angled outwards at veins 7, 4, 3, then incurved; a terminal series of slight black striæ. Hind wing pale uniformly suffused with pale reddish brown; the cilia white with a slight brown line through them; the underside white slightly irrorated with brown, a small discoidal spot and indistinct diffused postmedial line.

♀. Fore wing with the postmedial and terminal areas suffused with blackish leaving some greyish lunules on termen; the anal tuft blackish.

Hab. W. Turkestan, Turcomania, Merv in Coll. Püngeler, Ferghana, Sarawschan. *Exp.* ♂ 36, ♀ 42 millim.

3286. Sidemia fissipuncta.

Noctua ypsilon, Schiff. Wien. Verz. p 78 (1776), nec Rott. (1776); Sepp, Ins. iii. pl. 37; Hübn. Eur. Schmett., Noct. f. 136; Dup. Lép. Fr. vi. p. 135, pl. 81. f. 5; Frr. Neue Beitr. iv. pl. 329; Steph. Ill. Brit. Ent., Haust. ii. p. 149.
Noctua corticea, Esp. Schmett. iv. pl. 145, ff. 2, 3 (1789), nec Schiff.
Noctua nunatrum, Scriba, Beitr. Ins. Ges. p. 128, pl. 9. f. 6 (1790), nec Schiff.
Noctua fissipuncta, Haw. Lep. Brit. p. 197 (1809); Staud. Cat. Lep. pal. p. 204.
Dyschorista orenburghensis, Bartel, Iris, xv. p. 211 (1902).

Head, thorax, and abdomen reddish brown mixed with grey; sides of palpi and frons blackish; tarsi blackish with pale rings. Fore wing greyish suffused with red-brown and irrorated with a few black scales; a more or less developed black streak below base of cell; subbasal line represented by double dark striæ from costa and cell filled in with grey; antemedial line indistinctly double filled in

with grey, oblique, waved; claviform defined by black and often with two black streaks from its extremity to postmedial line; orbicular and reniform large, with slight white annuli defined by black, the former oblique elliptical, often produced at lower extremity and confluent with the latter, the cell before and between them sometimes tinged with black; traces of a medial line oblique from costa to lower angle of cell, then incurved; postmedial line indistinct, double filled in with greyish, bent outwards below costa, then minutely waved excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line whitish defined on inner side by slight dentate black marks except towards costa, angled outwards at vein 7, excurved at middle and slightly dentate at veins 4, 3; a terminal series of small black lunules; cilia with a fine pale line at base. Hind wing greyish suffused with brown, the veins and terminal area darker; cilia ochreous white with a brown line through them; the underside whitish irrorated with brown, a small discoidal spot, indistinct curved postmedial line with minute dark streaks on the veins, and traces of diffused subterminal band.

Ab. 1. *orenburghensis*. Fore wing greyer; hind wing yellow towards base.—Urals.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland; N. Italy; Russia, Livonia, Zeller Coll., Sarepta, Leech Coll., Urals; Armenia; Asia Minor, Pontus; Persia; W. Siberia, Altai; E. Siberia, Amurland, Ussuri. *Exp.* 36–44 millim.

Larva. Meyr. Brit. Lep. p. 64; Barrett, Lep. Brit. v. p. 301, pl. 223. f. 1. Brown sometimes tinged with reddish, with blackish markings; dorsal line pale; subdorsal line pale, interrupted; spiracular line pale, dark-edged above. Food-plants, *Salix* and poplar. 5.

3287. Sidemia devastatrix. (Plate CXIX. fig. 2.)

Phalæna devastator, Brace, Am. Journ. Sci. i. p. 154 (1819); Fitch, 2nd Rep. Ins. N.Y. p. 315, pl. 3. f. 2; Smith, Cat. Noct. N. Am. p. 136.
Mamestra abjecta, Guen. Noct. i. p. 193 (1852), nec Hübn.
Mamestra ordinaria, Wlk. ix. 232 (1856).
Mamestra contenta, Wlk. ix. 233 (1856).
Agrotis marshallana, Westw. Humphr. Br. Moths, i. p. 122, pl. 24. f. 15 (1857).

Head and thorax grey mixed with reddish brown; tegulæ with slight dark medial line; patagia with some black scales near upper edge; abdomen grey tinged with brown. Fore wing grey suffused with brown and irrorated with black; subbasal line represented by double black striæ from costa and cell; a more or less developed black streak below base of cell and another above inner margin before the antemedial line, which is double, oblique, waved; claviform more or less developed, defined by black; orbicular and reniform with slight white annuli defined by black, the former oblique elliptical, open above, the latter slightly angled inwards on median nervure; an indistinct curved waved medial line; postmedial line more or less distinctly double filled in with grey, bent outwards below costa, then minutely dentate and produced to black and white points on the

veins, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line distinct, whitish, defined on inner side by more or less developed dentate black marks at middle, angled outwards at vein 7 and somewhat excurved at middle; a terminal series of small black lunules; cilia with a fine pale line at base. Hind wing whitish tinged with brown, the veins and terminal area suffused with fuscous brown; a fine waved dark terminal line; cilia ochreous white; the underside ochreous white, the costal and terminal areas irrorated with brown, a slight dark discoidal lunule, curved postmedial line, and traces of diffused subterminal band.

Hab. Canada (*Norman*), 1 ♀, Renfrew Co., 10 ♂, 2 ♀, Toronto (*Prout*), 3 ♀, Ottawa (*Gibson, Fletcher, Young, Saunders*), 6 ♂, 3 ♀, Nova Scotia (*Redman*), 1 ♂, type *contenta*, Alberta, Calgary (*Wolley-Dod*), 4 ♂, 3 ♀, Vancouver I. (*J. J. Walker*), 1 ♀; U.S.A., Massachusetts (*Packard, Burg*), 6 ♂, 1 ♀, New York (*Scudder*), 1 ♂, 1 ♀, Trenton Falls (*Doubleday*), 2 ♂, type *ordinaria*, Washington Terr., 1 ♂, 1 ♀, Colorado, Boulder (*Cockerell*), 2 ♂, 1 ♀, South Park (*Oslar*), 2 ♂, 2 ♀, California, Soda Springs, 1 ♂, Arizona, Yavapai Co., Prescott (*Kunzé*), 1 ♂, 1 ♀. *Exp.* 42–48 millim.

Larva. Saunders, Ins. Inj. Fruits, p. 329, ff. 341, 342.

Shining green; head and thoracic plate dark brown; warts dark, each with a single hair; dorsal and lateral lines dark. Food-plants, strawberry, etc.

3288. **Sidemia standfussi.** (Plate CXIX. fig. 3.)

Luperina standfussi, Wisk. Stett. ent. Zeit. 1894, p. 90; Staud. Cat. Lep. pal. p. 169.

Head and thorax bluish grey tinged with brown; antennæ white at base; tarsi ringed with white; patagia with some black scales near upper edge; metathoracic crest with some black scales; abdomen white tinged with brown. Fore wing bluish grey tinged with brown and irrorated with fuscous; subbasal line whitish with double black striæ at costa, its extremity at submedian fold defined by black scales; antemedial line whitish defined on each side by some black scales, oblique, waved; claviform small, defined by black scales; orbicular and reniform whitish defined by black, the former oblique elliptical, the latter with some black in lower part, constricted at middle and slightly angled inwards to median nervure; traces of a sinuous medial dark line; postmedial line black defined by white on outer side, double towards costa, oblique from costa to vein 6, then dentate, incurved below vein 4, some white points beyond it on costa; subterminal line whitish, defined on inner side by faint dentate blackish marks, somewhat angled outwards at vein 7 and excurved at middle; a terminal series of slight black lunules; cilia with a white line at base followed by a blackish line. Hind wing white, the terminal area tinged with fuscous; a faint curved postmedial line; cilia white; the underside with the costal area slightly irrorated with brown, an indistinct waved subterminal line.

Hab. Germany, Bavaria; Austria, Tirol, in Coll. Püngeler; Switzerland, Chur (*F. E. Lowe*), 1 ♀; Rumelia. *Exp.* 46 millim.

3289. Sidemia zollicoferi.

Noctua zollikoferi, Frr. Neue Beitr. ii. p. 145, pl. 184. ff. 1, 2 (1836); Dup. Lép. Fr., Suppl. iv. p. 209, pl. 68. ff. 1 *a*, *b*; Herr.-Schäff. Eur. Schmett., Noct. ff. 103–4; Friv. Tud. Akad. Érkön. xi. pt. 4, pl. 5. f. 9; Barrett, Brit. Lep. iv. p. 367; Staud. Cat. Lep. pal. p. 169.

Head, thorax, and abdomen pale grey tinged with brown; antennæ white; sides of palpi and frons blackish; legs irrorated with fuscous, the tarsi with pale rings. Fore wing grey tinged with brown and slightly irrorated with fuscous; faint traces of an antemedial line with two dark striæ from costa; claviform absent; traces of a small elliptical orbicular with pale annulus; reniform slightly defined by fuscous, small and rather irregular; faint traces of a pale postmedial line with dark striæ from costa, bent outwards below costa, then with series of black points beyond it on the veins, excurved to vein 4, then oblique, some white points beyond it on costa; a very indistinct pale subterminal line faintly defined by brown on inner side, somewhat angled outwards at vein 7; a terminal series of minute dark points; cilia with a slight whitish line at base. Hind wing white slightly tinged with brown, especially on the veins and terminal area; cilia pure white; the underside white.

Ab. 1. Fore wing with fuscous suffusion in, below, and beyond cell and in interspaces of terminal area except at apex and tornus.—Urals, in Coll. Staudinger.

Hab. Britain, E. England; N. Germany; Hungary, Leech Coll.; Switzerland; Galicia; Russia, Sarepta, Zeller Coll., Urals, Zeller Coll.; W. Turkestan, Turcomania, 1 ♀; E. Turkestan, Korla, Kaschgar. *Exp.* 42–52 millim.

Larva. Kirby, Butt. Moths Eur. p. 219; Hffm. Raup. p. 296.

Green; feeds on low mountain plants and grasses. 5–6.

Genus **ECBOLEMIA**, nov.

Type, *E. misella*.

Proboscis absent; palpi obliquely upturned, fringed with hair in front, the 3rd joint short; frons with elliptical corneous prominence, roughened in front; eyes large, rounded; antennæ of male ciliated; head and thorax clothed with hair and hair-like scales, the pro- and metathorax with spreading crests, tibiæ fringed with hair on outer side; abdomen with dorsal crest at base only. Fore wing with the termen slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

*3290. Ecbolemia misella.

Margelana misella, Püng. Iris, xviii. p. 219, pl. 8. f. 1 (1906).

Head, thorax, and abdomen greyish ochreous mixed with brown; palpi blackish at sides; tarsi banded with black. Fore wing pale ochreous irrorated with dark brown; subbasal line represented by

small blackish spots below costa and cell; antemedial line rather diffused, oblique, waved, angled inwards on vein 1, with small black spots on costa and below cell; claviform very small, slightly defined by brown or obsolete; orbicular and reniform small, pale, slightly defined by brown, the former round, the latter quadrate, the cell between them reddish brown; a slight waved medial line with small black spot at costa; postmedial line with two black spots at costa, bent outwards below costa, then dentate, excurved to vein 4, then incurved, the costa beyond it with whitish points with blackish marks between them; subterminal line represented

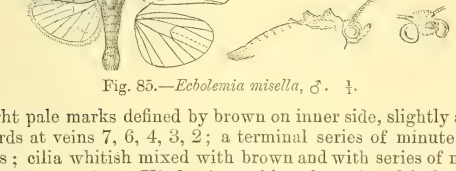


Fig. 85.—*Ecbolemia misella*, ♂. ½.

by slight pale marks defined by brown on inner side, slightly angled outwards at veins 7, 6, 4, 3, 2; a terminal series of minute black lunules; cilia whitish mixed with brown and with series of minute dark lunules at tips. Hind wing white, the veins faintly tinged with brown, the terminal area slightly suffused with brown in female; a terminal series of slight brown striæ; the underside with the costal and terminal areas slightly irrorated with brown, a slight discoidal point.

Hab. E. Turkestan, Ili, Kuldja, type † ♂, ♀ in Coll. Püngeler. *Exp.* 38 millim.

Genus MARGELANA.

Type.

Margelana, Staud. Stett. ent. Zeit. 1888, p. 20 ..... *versicolora.*

Proboscis minute; palpi obliquely porrect to just beyond frons, the 2nd joint fringed with hairs below the 3rd, short; frons smooth; eyes large, rounded; antennæ of male typically bipectinate; head and thorax clothed with hair and hair-like scales, the pro- and metathorax with spreading crests; tibiæ fringed with hair; abdomen with some rough hair at base but without crests. Fore wing triangular, the termen obliquely curved, crenulate; veins 3 and 5 from near angle of cell: 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with long branches to apex.

A. Antennæ of male with the branches stiff and rather wide apart; fore wing with the apex produced upwards, the termen obliquely curved.

3291. Margelana versicolora.

Margelana versicolor, Staud. Stett. ent. Zeit. 1888, p. 20; Christ. Rom. Mém. v. p. 27, pl. 2. f. 2; Staud. Cat. Lep. pal. p. 177.

♂. Head and thorax pale fulvous mixed with greyish; abdomen

ochreous white. Fore wing pale fulvous yellow, the veins streaked with white; antemedial line strong, white, defined on inner side by dark irroration, arising from base of cell, then excurved to middle of submedian fold, where it is angled and oblique to inner margin; orbicular an elliptical white spot; reniform represented by a white discoidal bar with its upper extremity bent outwards and its lower

Fig. 86.—*Margelana versicolora*, ♂. ½.

inwards; postmedial line strong, white, arising from costa towards apex, oblique, sinuous, some dark suffusion beyond it before the faint whitish oblique subterminal line; a slight dark terminal line; cilia white with a dark line through them. Hind wing white tinged with ochreous brown and with slight diffused ochreous brown postmedial shade; the underside white tinged with ochreous and with faint diffused postmedial line.

♀. Hind wing suffused with brown leaving an indistinct whitish subterminal band.

Hab. W. Turkestan, Turcomania, 1 ♂, 1 ♀, Ferghana. *Exp.* ♂ 38, ♀ 40 millim.

B. Antennæ of male with the branches decumbent and close together; fore wing with the apex not produced upwards, the termen less obliquely curved.

a. Fore wing with the orbicular and reniform white with dark centres, the terminal area bluish white ..... *lenis*.

b. Fore wing with the orbicular, reniform, and terminal area suffused with red-brown ..... *discrepans*.

3292. Margelana lenis.

Phæbophilus lenis, Staud. Iris, iv. p. 279 (1892); id. Cat. Lep. pal. p. 177.

♂. Head and thorax white mixed with brown; palpi with dark marks at side of 2nd joint; antennæ ochreous white;

Fig. 87.—*Margelana lenis*, ♂. ½.

abdomen ochreous white. Fore wing white irrorated with reddish brown and black, the terminal area blue-white with dark irroration; subbasal and antemedial lines absent; claviform a large white

mark slightly defined by black, acute at extremity; orbicular and reniform white defined by blackish, the former small, round, with slight dark centre, the latter with curved dark mark in centre and undefined on outer side and below; postmedial line slightly defined by white on outer side, bent outwards below costa, then dentate, angled inwards in discal fold and oblique below vein 4, some slight whitish points beyond it on costa; subterminal line white defined on inner side by slight rufous suffusion and minute somewhat dentate red-brown marks, excurved below vein 7 and at middle, a terminal series of small black lunules; cilia chequered fuscous brown and white. Hind wing silvery white with fine waved black terminal line; the underside with the apical area sparsely irrorated with black, a dark discoidal lunule and lunulate black terminal line except towards tornus.

Hab. Palestine, 1 ♂. *Exp.* 38 millim.

3293. Margelana discrepans. (Plate CXIX. fig. 4.)

Heliophobus discrepans, Staud. Iris, iv. p. 278 (1891); id. Iris, vi. pl. 1. f. 10; id. Cat. Lep. pal. p. 177.

♂. Head, thorax, and abdomen red-brown mixed with greyish; sides of palpi and frons blackish; tarsi black ringed with white. Fore wing ochreous white suffused with red-brown and irrorated with fuscous; a slight waved black subbasal line from costa to submedian fold; antemedial line indistinct, black, waved, rather diffused; claviform moderate, rather strongly defined by black and with blackish streak from it to postmedial line; orbicular and reniform slightly defined by black, the former round, the latter rather quadrate, open above and with fuscous mark in lower part; postmedial line slightly defined by whitish on outer side, slightly bent outwards below costa, then dentate, oblique below vein 4, some white points beyond it on costa; subterminal line whitish defined on inner side by slight and somewhat dentate white marks, excurved below vein 7 and at middle; a terminal series of rather strong black lunules; cilia fuscous and pale brown intersected with whitish. Hind wing almost pure white with fine blackish terminal line; the underside with the costal area irrorated with brown.

Hab. Palestine, 1 ♂. *Exp.* 36 millim.

Sect. II. Antennæ of male minutely serrate and fasciculate.

*3294. Margelana veternosa.

Margelana veternosa, Püng. Iris, 1906, p. 218, pl. 8. f. 15.

♂. Head and thorax grey mixed with dark brown; palpi with the 2nd joint blackish at sides; frons with lateral black bars; tegulæ with slight dark line near upper edge; patagia with some blackish near edges; tarsi blackish with pale rings; abdomen grey-white tinged with brown. Fore wing grey tinged with brown and irrorated with fuscous, the veins beyond the cell with slight dark streaks; subbasal line represented by double black striæ from costa

and in cell; a short blackish streak below base of cell with some oblique blackish suffusion from its extremity to inner margin; antemedial line blackish slightly defined by whitish on inner side, slightly angled inwards below costa, oblique to submedian fold, then inwardly oblique and indistinct; claviform minute, defined by blackish and with diffused dark brown streak from it to postmedial line; orbicular and reniform with brownish centres and whitish

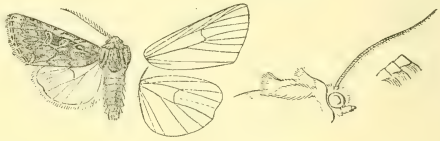


Fig. 88.—*Margelana vetternosa*, ♂. ½.

annuli defined by black, the former narrow, oblique, the latter open above and below, the cell before and between them dark brown; postmedial line obsolescent from costa to vein 2, bent outwardly below costa, incurved below vein 4 to below end of cell, below vein 2 black defined by whitish on outer side, slightly angled outwards on vein 1, some white points beyond it on costa; subterminal line whitish slightly defined by brown on inner side forming slight dentate marks at middle, angled outwards at vein 7, dentate inwards below veins 6, 5, 4, and outwards on vein 3, then incurved, a dark streak from it to termen below vein 4; a fine waved black terminal line; cilia whitish with series of brown lunules and brownish tips. Hind wing white with slight discoidal spot, the terminal area slightly tinged with brown; a fine waved dark terminal line; cilia white with slight brown line through them; the underside with the costal and terminal areas irrorated with brown, a small discoidal spot.

Hab. W. TURKESTAN, Aschabad, type † ♂ in Coll. Püngeler. *Exp.* 40 millim.

Genus **CENTROPODIA**. n. n.

Centropus, Christ. Rom. Mém. v. p. 30 (1889), nec Ill. Aves, 1811, & Kner, Pisc. 1860 ..... Type, *scripturosa*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately scaled, the 3rd short; frons smooth; eyes large, round; antennæ of female ciliated; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; fore tibiæ with one or more claws on outer side; mid and hind tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Fore tibia with seven claws on outer side.

3295. Centropodia scripturosa.

Xylina scripturosa, Ev. Bull. Mosc. 1854, iii. p. 190, & 1856, iii. p. 77; Herr.-Schäff. Neue Schmett. p. 3, f. 16; Ersch. Fedtsch. Reis. p. 39, pl. 3. f. 37; Christ. Rom. Mém. v. p. 31, pl. 2. f. 4; Staud. Cat. Lep. pal. p. 154.

♀. Head and thorax white mixed with fuscous and black; tarsi banded black and white; abdomen white irrorated with fuscous, the base white. Fore wing white mostly suffused with fuscous and sparsely irrorated with black, with faint ochreous streaks in discal and submedian folds; subbasal line represented by a black point below costa; antemedial line indistinct, waved, angled inwards on vein 1; orbicular with fuscous centre and white annulus defined by fuscous, elongate elliptical; reniform with fuscous centre and undefined white annulus, expanding below and angled inwards on

Fig. 89.—*Centropodia scripturosa*. ♀. ½.

vein 1; postmedial line very indistinct, defined by white on outer side at costa, oblique from costa to vein 7, then dentate, incurved below vein 4, some white points beyond it on costa; subterminal line white defined on inner side by dentate black marks, slightly waved, angled outwards at vein 7 and inwards at discal and submedian folds; a terminal series of small black lunules slightly defined by whitish on inner side; cilia chequered fuscous and white. Hind wing white, the inner, and the terminal area except towards apex, slightly tinged with brown; the underside with the costal and terminal areas very slightly irrorated with fuscous.

Hab. W. Turkestan, Turcomania, 1 ♀, S. Kirghistan; E. Turkestan, Ili. *Exp.* 40 millim.

Sect. II. Fore tibia with one long claw on outer side at extremity.

*3296. Centropodia inquinata.

Hadena inquinata, Mab. Bull. Soc. Ent. Fr. 1888, p. 43; Staud. Cat. Lep. pal. p. 158.

♀. Head and thorax grey mixed with brown; abdomen ochreous white irrorated with brown. Fore wing ochreous white suffused with grey and thickly irrorated with brown; a very indistinct waved antemedial line; orbicular and reniform whitish defined by fuscous, the former minute, wedge-shaped, the latter small, quadrate; postmedial line dentate, defined by whitish on outer side, bent outwards below costa, excurved to vein 4, then oblique; sub-

terminal line whitish interrupted, angled outwards at vein 7 and dentate at veins 4 and 3; a terminal series of black points; cilia ochreous white with two brown lines and the tips brown. Hind

Fig. 90.—*Centropodia inquinata*, ♀. ½.

wing white, the terminal half suffused with fuscous brown except towards costa; cilia white; the underside white irrorated with brown.

Hab. Tunis, Gabes, type † ♀ in Coll. Mabille. *Exp.* 34 millim.

Genus **PSEUDOHADENA.**

	Type.
Pseudohadena, Alph. Rom. Mém. v. p. 163 (1889)	*armata.*
Rhiza, Staud. Stett. ent. Zeit. 1889, p. 44.....	*commoda.*
Gryphadena, Kustenov, Ann. Mus. St. Petersb. xiii. p. 65 (1908).	*minuta.*

Proboscis fully developed; palpi porrect, not reaching beyond the frontal tuft and fringed with hair below; frons smooth; eyes large, rounded; antennæ of male ciliated; head and thorax clothed with hair and hair-like scales, the pro- and metathorax with slight spreading crests; fore tarsi with more or less developed curved claw-like spines on outer side of 1st joint; abdomen with rough hair at base but without crests. Fore wing with veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with prominent white annulus to claviform... *laciniosa.*
B. Fore wing without prominent white annulus to claviform.
  a. Fore wing with black streak below base of cell.
    a^1. Fore wing with the black streak below base of cell extending to the claviform.
      a^2. Fore wing with three obliquely-placed black subterminal streaks towards apex ..... *sergia.*
      b^2. Fore wing with the subterminal line defined on inner side by slight dentate dark marks throughout.
        a^3. Fore wing tinged with reddish..... *idumæa.*
        b^3. Fore wing tinged with fuscous ..... *schlumbergeri.*
    b^1. Fore wing with the black streak below base of cell not extending to claviform.
      a^2. Fore wing with black streaks on the dentate brown marks before subterminal line towards apex.
        a^3. Fore wing tinged with red-brown ..... *chenopodipha*
        b^3. Fore wing not tinged with red-brown ..... *commoda.*
      b^2. Fore wing without black streaks on the dentate brown marks before subterminal line.
        a^3. Fore wing with the costal and postmedial areas not whiter than the ground-colour..... *siri.*
        b^3. Fore wing with the costal area to postmedial line and the postmedial area except towards costa whiter than the ground-colour ..... *pugnax.*

b. Fore wing without black streak below base of cell.
*a*¹. Fore wing with the postmedial line distinct.
*a*². Fore wing with the postmedial line distinctly defined by white on outer side ..... *minuta*.
*b*². Fore wing with the postmedial line not defined by white on outer side.
*a*³. Hind wing with large black discoidal spot ..... *crassipuncta*.
*b*³. Hind wing without black discoidal spot.
*a*⁴. Fore wing strongly tinged with red ..... *roseonitens*.
*b*⁴. Fore wing suffused and irrorated with red-brown.
*a*⁵ Fore wing with the ground-colour grey ... *immunda*.
*b*⁵. Fore wing with the ground-colour flesh-colour.
*a*⁶. Hind wing with hardly a trace of post-medial line; antennæ of male minutely fasciculate ..... *immunis*.
*b*⁶. Hind wing with prominent dark post-medial line; antennæ of male strongly fasciculate ..... *pexa*.
*c*⁴. Fore wing pale flesh-colour not suffused and irrorated with red-brown.
*a*⁵. Fore wing with the outer half of medial area and the terminal area darker than the ground-colour..... *arvicola*.
*b*⁵. Fore wing with the outer half of medial area and the terminal area concolorous... *colutea*.
*b*¹. Fore wing with the postmedial line obsolescent.
*a*². Fore wing suffused with red-brown.
*a*³. Fore wing with the subterminal line defined on inner side by red-brown throughout ..... *indigna*.
*b*³. Fore wing with the subterminal line defined on inner side by slight brown spots at middle ... *contumax*.
*b*². Fore wing white slightly tinged with ochreous brown.
*a*³. Fore wing with the subterminal line defined by brown on inner side ..... *armata*.
*b*³. Fore wing with the subterminal line obsolete... *jordana*.

3297. Pseudohadena laciniosa.

Chloantha laciniosa, Christ. Rom. Mém. iii. p. 77, pl. 4. f. 4 (1887); Staud. Cat. Lep. pal. p. 183.

♂. Head, thorax, and abdomen pale ochreous brown; palpi

Fig. 91.—*Pseudohadena laciniosa*, ♂. ½.

tinged with fuscous; frons with lateral black bars; patagia with black lines near edges; pectus and legs grey tinged with fuscous.

Fore wing pale ochreous brown, the medial area except towards costa and inner margin slightly tinged with fuscous, the veins streaked with black; slight black streaks below base of costa and in base of cell; a black streak in base of submedian fold and a short streak above inner margin before the antemedial line, which is interrupted below costa, then very strongly angled outwards in cell, submedian fold and above inner margin and inwards on median nervure and vein 1; claviform slightly defined by black, acute at extremity; orbicular and reniform defined by black, the former oblique elliptical, its lower extremity slightly produced and its centre slightly defined by brown on inner side, the latter with pale brown centre and its upper extremity produced; postmedial line bent outwards below costa, incurved below vein 7, oblique and dentate below vein 4, some slight pale points beyond it on costa; subterminal line defined on inner side by pale brown shades from above vein 7 to below vein 6 and from below vein 5 to below 3, with short black streaks before it below veins 7, 6, 4, 3, angled outwards to termen at veins 7, 4, 3; a fine waved black terminal line; cilia brownish intersected with ochreous and with fine ochreous line at base. Hind wing pale ochreous brown, the cilia ochreous white; the underside white, the costal area tinged with ochreous and very slightly irrorated with brown, a slight discoidal spot and indistinct sinuous postmedial line.

♀. Hind wing with the terminal area more suffused with fuscous.

Hab. Turkestan, Turcomania, Tarbagatai Mts., Issyk Kul; E. Turkestan, Ili; Mongolia, Uliassutai, Aksu, 1 ♂, 1 ♀. *Exp.* 40 millim.

3298. Pseudohadena sergia. (Plate CXIX. fig. 5.)

Pseudohadena sergia, Püng. Iris, xiv. p. 184, pl. 3. f. 1 (1901).

Head and thorax pale brownish with a slight flesh tinge; abdomen brownish white slightly tinged with fuscous on dorsum. Fore wing pale brownish with a slight flesh tinge; the veins faintly streaked with black; subbasal line represented by a slight black point on costa; a black streak below base of cell confluent with the narrow elongate claviform which is defined by black; traces of an oblique slightly sinuous antemedial line; orbicular and reniform defined by black, the former an oblique wedge-shaped mark, open above, its lower extremity connected with the reniform, which is rather irregular and ill-defined except on inner side; postmedial line indistinct, slightly bent outwards below costa, excurved to vein 4, then incurved, some slight pale points beyond it on costa; an oblique series of short black streaks above veins 6, 5, 4; faint traces of a pale submedial line with very slight black marks on its inner side; a fine black terminal line; cilia pale brown with whitish line at base. Hind wing whitish tinged with

fuscous especially on the veins and terminal area; cilia white; the underside white slightly irrorated with brown, a small discoidal spot and indistinct sinuous postmedial line.

Hab. W. Turkestan, Ferghana, Togus-torau; Mongolia, Aksu, 1 ♂, 1 ♀. *Exp.* ♂ 42, ♀ 44 millim. Type † in Coll. Püngeler.

*3299. Pseudohadena idumæa. (Plate CXIX. fig. 6.)

Pseudohadena idumæa, Püng. Iris, xiv. p. 331 (1901); id. Iris, xv. pl. 6. f. 23.

Head and thorax ochreous mixed with dark brown; frons with some black at sides; patagia with blackish line near upper edge; abdomen pale ochreous. Fore wing pale ochreous slightly tinged with reddish brown and irrorated with dark brown; subbasal line represented by a dark striga from costa; a sinuous black streak in submedian fold to the antemedial line, which is double at costa, then single, oblique, irregularly dentate, angled inwards on vein 1; claviform narrow, defined by blackish, acute at extremity; orbicular and reniform defined by black at sides only, the former oblique oblong, its lower extremity sometimes produced and confluent with the latter which is constricted at middle and with its lower extremity indistinctly bidentate; postmedial line sometimes double at costa, then dentate, excurved to vein 4, then oblique, more or less distinct; subterminal line formed by slight pale marks defined on inner side by wedge-shaped black marks between veins 7 and 2, angled outwards at veins 7, 4, 3, and inwards above and below vein 5; the veins of terminal area with slight dark streaks ending in points; cilia with a fine pale line at base. Hind wing ochreous white; the veins tinged with brown; the terminal area suffused with brown except towards tornus; cilia white; the underside white, the costal and terminal areas slightly irrorated with brown.

The claw-like spines on 1st joint of fore tarsi rather fine.

Hab. Palestine, Petra, type † ♂ ♀ in Coll. Püngeler. *Exp.* ♂ 32, ♀ 36 millim.

*3300. Pseudohadena schlumbergeri. (Plate CXIX. fig. 7.)

Pseudohadena schlumbergeri, Püng. Iris, xvii. p. 265 (1904).

Head, thorax, and abdomen brownish grey mixed with fuscous; tarsi banded with blackish. Fore wing brownish grey thickly irrorated with fuscous, the veins with slight dark streaks; a black streak below base of cell more or less confluent with the narrow elongate claviform which is defined by black; subbasal line represented by a black striga from costa; antemedial line rather indistinct, minutely waved, oblique from costa to submedian fold where it is angled; orbicular and reniform with whitish annuli defined by blackish, the former oblique, its lower extremity produced and more or less approaching the reniform, which is constricted at middle and more or less angled inwards on median nervure, with slight dark suffusion on its lower part; postmedial line bent out-

wards below costa, then dentate, incurved below vein 4, some whitish points beyond it on costa; subterminal line indistinct, whitish defined by brown on inner side, somewhat dentate, angled outwards at veins 7, 4, 3; a fine waved terminal line; cilia with whitish line at base, then a dark line. Hind wing pale nearly uniformly suffused with fuscous; cilia whitish; the underside whitish irrorated with brown, a discoidal point and indistinct sinuous postmedial line.

Hab. W. Turkestan, Dschaskent, 3 ♀; E. Turkestan, Thian-Schan Mts. *Exp.* 36–38 millim. Type† ♂ ♀ in Coll. Püngeler.

3301. Pseudohadena chenopodiphaga.

Mamestra chenopodiphaga, Rmbr. Ann. Soc. Ent. Fr. i. p. 283, pl. 9. f. 7 (1832); Frr. Neue Beitr. iii. pl. 209. f. 1; Geyer, Samml. Eur. Schmett., Noct. ff. 831, 832; Dup. Lép. Fr. Suppl. iii. p. 251, pl. 23. f. 5; Mill. Icones, i. pl. 13. ff. 2–6; Staud. Cat. Lep. pal. p. 170.
Pseudohadena erubescens, Staud. Cat. Lep. pal. p. 170 (1901).

Head and thorax grey tinged with ochreous and mixed with reddish brown; frons with slight lateral fuscous lines; tegulæ with traces of a dark line near base; patagia with black line near upper edge; tarsi fuscous ringed with ochreous; abdomen pale ochreous brown. Fore wing ochreous white tinged with red-brown and with slight dark irroration especially on costa and terminal area; the veins with slight dark streaks; a sinuous black streak below base of cell; subbasal line represented by double oblique striæ from costa to cell; antemedial line double filled in with whitish, strongly angled outwards in the interspaces and inwards on the veins; claviform small or moderate, defined by black; orbicular and reniform defined by black, the former more or less elongate and produced to points at sides, sometimes confluent with the latter which is slightly angled inwards on median nervure; an indistinct slightly waved medial line angled outwards on median nervure; postmedial line double filled in with whitish, bent outwards below costa, then dentate and produced to white points on the veins, oblique below vein 4, some pale points beyond it on costa; subterminal line pale defined by fuscous suffusion before and beyond it and on inner side by somewhat dentate black streaks below costa and at middle, angled outwards to near termen at veins 7, 6, 4, 3; a fine waved black terminal line. Hind wing ochreous whitish, the veins and terminal area suffused with brown; the underside white, the costal area irrorated with brown, a small discoidal spot and sinuous postmedial line.

Ab. 1. *erubescens.* Head, thorax, and fore wing tinged with rufous.—Biskra, Persian Gulf.

Hab. S. France, Leech and Zeller Colls.; Spain, Catalonia, Barcelona, Frey Coll.; Corsica; Italy; Algeria, Biskra (*Walsingham*), 1 ♂; Armenia; Syria, Mardin; Persian Gulf, Fáo (*Cumming*), 4 ♂, 2 ♀; W. Turkestan, Turcomania, Sarawschan; E. Turkestan, Ili. *Exp.* 50–52 millim.

Larva. Kirby, Eur. Butt. & Moths, p. 236; Hffmn. Raup. p. 96, pl. 27. f. 8. Yellowish or reddish, dull blue ventrally, with dusky dorsal and subdorsal lines and oblique dark lateral streaks. Food-plants: *Chenopodium fruticosum*, *Atriplex portulacoides*, and *Salsola soda*.

3302. Pseudohadena commoda. (Plate CXIX. fig. 8.)

Rhiza commoda, Staud. Stett. ent. Zeit. 1889, p. 44; Püng. Iris, xv. p. 160, pl. 5. f. 13; Staud. Cat. Lep. pal. p. 183.
Rhiza manifesta, Christ. Iris, vi. p. 92 (1893); Staud. Cat. Lep. pal. p. 183.

Head, thorax, and abdomen brownish white; tarsi fuscous with pale rings. Fore wing brownish white sparsely irrorated with fuscous; a slight black streak below base of cell; subbasal line slightly waved, from costa to submedian fold; antemedial line somewhat oblique, minutely waved, angled outwards above inner margin, traces of a narrow claviform defined by blackish; orbicular and reniform whitish, the former defined by black at sides, oblique elliptical, rather irregular, sometimes produced on inner side, the latter defined by black on inner side, ill-defined on outer, rather constricted at middle; traces of a waved medial line angled outwards to lower angle of cell; postmedial line bent outwards below costa, then dentate, oblique below vein 4; subterminal line indistinct, defined on inner side by three more or less prominent dentate black marks between veins 7 and 4. Hind wing ochreous white tinged with fuscous especially on terminal area; cilia white; the underside white, the costal and terminal areas irrorated with brown, a slight discoidal bar and indistinct somewhat sinuous postmedial line with minute dark streaks on the veins.

Ab. 1. *manifesta*. Darker.—Armenia.

Hab. Armenia; W. Turkestan, Issyk-Kul, 1 ♂, 2 ♀; E. Turkestan, Kaschgar; Mongolia, Aksu. *Exp.* 40 millim.

3303. Pseudohadena siri.

Mamestra siri, Ersch. Fedtsch. Reis. p. 41, pl. 3. f. 42 (1874); Christ. Rom. Mém. v. p. 31, pl. 2. f. 5; Staud. Cat. Lep. pal. p. 170.

Head, thorax, and abdomen grey-brown slightly mixed with fuscous; frons with lateral black bars; patagia with some black scales near upper edge. Fore wing grey-brown; the veins with slight dark streaks; subbasal line represented by double black striæ from costa and cell filled in with grey; a black streak below base of cell; antemedial line double filled in with grey, minutely and irregularly dentate, angled inwards at vein 1; claviform small or obsolete, slightly defined by blackish; orbicular and reniform defined by blackish, the former grey, more or less oblique elliptical, the latter with fuscous centre and grey annulus; a diffused medial shade angled on median nervure; postmedial line indistinctly double filled in with grey, bent outwards below costa, then dentate, incurved below vein 4 and angled outwards on vein 1; subterminal line indistinct, pale defined on inner side by somewhat dentate fuscous marks and a more prominent oblique shade between veins 7 and 5, angled outwards at veins 7, 4, 3; a fine terminal lunulate line; a

fine pale line at base of cilia. Hind wing ochreous tinged with brown, the veins and terminal area suffused with fuscous; the underside grey irrorated with brown, a black discoidal lunule and sinuous postmedial line showing though to upperside.

Hab. W. Turkestan, Tedschen Oasis, 1 ♂, Tekke, 1 ♂, Sarawschan, Ferghana, Issyk-Kul, 1 ♂, 1 ♀; E. Turkestan, Ili, Kaschgar; Mongolia, Uliassutai Mts. *Exp.* 50 millim.

*3304. Pseudohadena pugnax.

Pseudohadena pugnax, Alph. Horæ, Soc. Ent. Ross. xxvi. p. 449 (1892); id. Rom. Mém. ix. p. 26, pl. 2. f. 10; Staud. Cat. Lep. pal. p. 170.

Head and thorax ochreous brown tinged with grey; abdomen whitish tinged with brown. Fore wing pale ochreous brown, the costal area to postmedial line, the basal area and the postmedial area except towards costa whitish; a slight black streak below base of cell; subbasal line represented by double black striæ from costa; antemedial line double filled in with whitish, oblique, waved, angled inwards on the veins; claviform defined by blackish; orbicular and reniform large, with whitish annuli defined by black, the former oblique elliptical; postmedial line defined by whitish on outer side, bent outwards below costa, then minutely dentate, oblique below vein 4; subterminal line whitish, defined on inner side by small dentate brown marks, angled outwards at veins 7, 4, 3; a fine waved dark terminal line. Hind wing white, the veins and terminal area tinged with brown; the underside glossy white slightly irrorated with grey, a dark discoidal spot.

Hab. W. Siberia, Songaria. *Exp.* 44–48 millim. This species is unknown to me.

3305. Pseudohadena minuta. (Plate CXIX. fig. 9.)

Pseudohadena minuta, Püng. Iris, xii. p. 293, pl. 9. f. 10 (1900); Staud. Cat. Lep. pal. p. 170.

Head, thorax, and abdomen brownish white mixed with dark brown; tarsi banded with blackish. Fore wing whitish thickly irrorated with dark brown; subbasal line represented by dark striæ from costa and cell defined by whitish on outer side; antemedial line defined by whitish on inner side, angled outwards in the interspaces and inwards on the veins; orbicular and reniform small with whitish annuli defined by black, the former round, the latter narrow, rather irregular and ill-defined except on inner side, a dark spot on its lower outer edge; a curved diffused medial shade; postmedial line defined by whitish on outer side, bent outwards below costa, then dentate, incurved below vein 4, some whitish points beyond it on costa; postmedial area suffused with fuscous defining the pale dentate subterminal line, which is angled outwards on veins 7, 4, 3, and inwards in discal fold; a terminal series of small dark lunules; cilia ochreous whitish chequered with fuscous and with slight dark lines through them. Hind wing whitish suffused with brown especially on the veins and terminal area; cilia whitish; the underside whiter, the

costal and terminal areas irrorated with brown, a sinuous postmedial line showing through to upperside.

Hab. W. Turkestan, Turcomania. Dschaskent, 1 ♂, 1 ♀; E. Turkestan, Ili, type † ♂ in Coll. Püngeler. *Exp.* 34 millim.

*3306. Pseudohadena crassipuncta. (Plate CXIX. fig. 10.)

Pseudohadena crassipuncta, Püng. Iris, xvii. p. 266 (1904).

♀. Head and thorax white slightly tinged with ochreous and irrorated with fuscous; palpi blackish at sides; tarsi banded with black; abdomen white slightly irrorated with fuscous. Fore wing ochreous white rather sparsely irrorated with black; subbasal line blackish, from costa to submedian fold; antemedial line ill-defined, blackish, oblique, angled outwards in the interspaces and inwards on the veins; claviform large, incompletely defined by black; orbicular and reniform indistinctly defined by blackish, the former rather small, elongate elliptical, the latter irregular; postmedial line black, bent outwards below costa, then dentate, oblique below vein 4; subterminal line strongly and regularly dentate, hardly defined except by the area beyond it being tinged with fuscous; a terminal series of black lunules; cilia white with terminal series of black spots. Hind wing white, the veins tinged with brown; the terminal area broadly suffused with brown except on inner area, running inwards below the cell; a large rather triangular black discoidal spot; a slight minutely waved postmedial line; cilia white. Underside of both wings white, with large black discoidal spots and rather diffused curved postmedial line except on inner area.

Hab. Mongolia, Aksu, type † ♀ in Coll. Püngeler. *Exp.* 40 millim.

*3307. Pseudohadena roseonitens.

Mamestra roseonitens, Oberth. Bull. Soc. Ent. Fr. 1887, p. 49; id. Ét. Ent. xii. pl. 5. f. 20; Staud. Cat. Lep. pal. p. 170.

♂. Head and thorax ochreous tinged with red; sides of palpi and frons with some fuscous; fore and mid tarsi tinged with fuscous with pale rings; abdomen ochreous white. Fore wing ochreous tinged with red and slightly irrorated with brown; subbasal line represented by two striæ from costa and one from cell; antemedial line with two striæ from costa, then single, oblique, waved, interrupted, defined by paler colour on inner side; orbicular and reniform defined by blackish at sides only, the former irregular rounded, the latter constricted at middle, its lower part slightly tinged with fuscous; a slight medial shade, oblique from costa to lower angle of cell, then inwardly oblique, with small black spot on costa; postmedial line with two small black spots on costa, then single, bent outwards below costa, then dentate, excurved to vein 4, then incurved, some ochreous points beyond it on costa; subterminal line indistinct, ochreous defined by fuscous suffusion on inner side, angled outwards

at veins 7, 6, 4, 3, and incurved at discal and submedian folds; a slight waved dark terminal line; cilia with slight brown line through them. Hind wing ochreous white with faint brownish subterminal shade; the underside almost pure white.

Hab. Algeria, Biskra, in Coll. Püngeler. *Exp.* 46 millim.

3308. Pseudohadena immunda.

Agrotis immunda, Ev. Bull. Mosc. 1842, iii. p. 544, pl. v. f. 1.; Herr.-Schäff. Eur. Schmett., Noct. ff. 161–2; Frr. Neue Beitr. pl. 429. f. 1; Staud. Cat. Lep. pal. p. 170.

Mamestra halimi, Mill. Ann. Soc. Ent. Belg. 1877, p. 58, pl. 1. ff. 17–19.

Head and thorax olive-fuscous; abdomen fuscous, paler at base. Fore wing olive-fuscous; an indistinct double waved subbasal line filled in with grey, from costa to submedian fold; antemedial line defined by grey on inner side, waved; claviform small, defined by black; orbicular and reniform well-developed with grey annuli defined by black, the former round; a medial shade angled outwards on median nervure; postmedial line defined by grey on outer side, bent outwards below costa, then dentate and produced to white points on the veins, incurved below vein 4; subterminal line indistinct, greyish defined on inner side by a series of small dentate black marks, angled outwards at veins 7, 4, 3; a terminal series of small black lunules; a fine pale line at base of cilia. Hind wing fuscous, rather paler at base, the cilia whitish; the underside brownish white irrorated with brown, a slight discoidal lunule and sinuous postmedial line showing through to upperside.

Ab. 1. *halimi*. Ground-colour much more ochreous; fore wing irrorated with black, the markings less distinct and not defined by pale colour.—S. France.

Hab. S. France, 1 ♂, 1 ♀; Russia, Urals, 2 ♂, 1 ♀; W. Turkestan, Ferghana, Issyk-Kul; W. Siberia, Altai. *Exp.* 52 millim.

Larva. Kirby, Butt. & Moths Eur. p. 235; Hffmn. Raup. p. 296.

Dull brown or bluish green with a white lateral line. Food-plant: *Atriplex halimus*.

3309. Pseudohadena immunis. (Plate CXIX. fig. 11.)

Luperina immunis, Staud. Stett. ent. Zeit. 1889, p. 40; id. Cat. Lep. pal. p. 170.

Head and thorax pale brownish grey irrorated with reddish brown; frons with lateral blackish bars; tarsi fuscous with pale rings; abdomen pale grey-brown. Fore wing pale grey with a faint flesh tinge and slight fuscous irroration; a slight waved subbasal line from costa to submedian fold with an indistinct pale brownish band between it and the antemedial line, which is waved and somewhat oblique; claviform represented by a slight brown mark at its extremity; orbicular and reniform with faint pale annuli indistinctly defined by brown, the former produced to a point on outer side, the

latter large with some pale points on its edges; outer half of medial area pale brown, its inner edge excurved at middle; postmedial line bent outwards below costa, then dentate and produced to pale points on the veins, incurved at submedian interspace, some whitish points beyond it on costa; subterminal line indistinct, pale defined by small somewhat dentate brown marks on inner side, angled outwards at veins 7, 4, 3; a terminal series of black points; a fine pale line at base of cilia. Hind wing fuscous brown, the basal half and inner area rather paler; cilia ochreous at base, then with brown line and whitish tips; the underside grey irrorated with brown, a discoidal lunule, sinuous postmedial line showing through to upperside, and fuscous suffusion on terminal area.

Hab. W. Turkestan, Issyk-Kul, 4 ♂, 1 ♀; E. Turkestan, Kaschgar, Thian-Schan Mts., Ili. *Exp.* 54 millim.

3310. Pseudohadena pexa. (Plate CXIX. fig. 12.)

Luperina pexa, Staud. Stett. ent. Zeit. 1889, p. 41; id. Cat. Lep. pal. p. 170.

Antennæ of male with strongly fasciculate cilia.

Head and thorax brown mixed with grey; tarsi fuscous with pale rings; abdomen grey suffused with brown. Fore wing brownish grey slightly irrorated with fuscous, the antemedial and postmedial areas browner; subbasal line defined by grey on outer side, slight, waved, from costa to submedian fold; antemedial line defined by grey on inner side, waved, somewhat oblique; orbicular and reniform slightly defined by brown, the former round, the latter large, its centre slightly defined by brown; a diffused medial brown shade, excurved to median nervure and incurved below the cell; postmedial line defined by grey on outer side, bent outwards below costa, then dentate and produced to pale points on the veins, incurved below vein 4, some pale points on costa beyond it; subterminal line represented by a series of pale points with dentate brown marks on their inner side, slightly angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules; a fine pale line at base of cilia. Hind wing pale reddish brown, the terminal area suffused with fuscous; cilia white; the underside whitish grey irrorated with brown, a slight discoidal lunule, minutely waved postmedial line excurved to vein 2, then incurved and showing through to upperside, and diffused subterminal band.

Hab. W. Turkestan, Issyk-Kul, 1 ♀; E. Turkestan, Kaschgar, Ili, 1 ♂. *Exp.* 52 millim.

3311. Pseudohadena arvicola.

Agrotis arvicola, Christ. Rom. Mém. v. p. 18, pl. 1. f. 7 (1889); Staud. Cat. Lep. pal. p. 170.

Head and thorax white mixed with pale fuscous and with a slight flesh tinge; abdomen ochreous white dorsally tinged with

fuscous. Fore wing whitish tinged with flesh-pink, irrorated and in places suffused with bluish grey, especially on basal area, outer half of medial area and terminal area; subbasal line indistinctly double, waved, from costa to submedian fold; antemedial line double, waved; claviform sometimes represented by a few black scales at its extremity; orbicular and reniform with some grey in centres and flesh-coloured annuli defined by blackish, the former rather oblique elliptical, the latter constricted at middle; postmedial line dentate, slightly bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line dentate, angled outwards at vein 7 and excurved at middle; cilia ochreous with series of fuscous spots. Hind wing ochreous whitish almost wholly suffused with fuscous; the underside whitish, the costal and terminal areas irrorated with fuscous, a discoidal point and curved postmedial line showing through to upperside.

Hab. W. Turkestan, Turcomania; E. Turkestan, Korla, 1 ♂, 1 ♀. *Exp.* 46 millim.

3312. Pseudohadena coluteæ. (Plate CXIX. fig. 13.)

Luperina coluteæ, Bienert, Lep. Ergeb. Reis. Pers. p. 35 (1869); Staud. Cat. Lep. pal. p. 170.

♀. Head and thorax whitish brown; frons with lateral blackish bars; abdomen ochreous white. Fore wing brownish white tinged with flesh-colour; the lines with black points at costa; subbasal line incurved, from costa to submedian fold; antemedial line excurved in interspaces and angled inwards on the veins, somewhat oblique; orbicular and reniform with traces of slight ochreous annuli, the former elongate elliptical, slightly defined by black at sides, the latter very ill-defined except for a black striga on inner side; a diffused brown medial shade, its inner edge angled outwards to lower angle of cell; postmedial line bent outwards below costa, then dentate, incurved at discal and submedian folds and oblique below vein 4; subterminal line represented by a series of slight dentate black marks angled outwards at vein 7 and excurved at middle. Hind wing pale nearly uniformly suffused with fuscous brown leaving the inner area paler; cilia flesh-white; the underside white with minute discoidal point and indistinct sinuous postmedial line with minute dark streaks at the veins.

Hab. Persia, 1 ♀. *Exp.* 50 millim.

3313. Pseudohadena indigna.

Agrotis indigna, Christ. Stett. ent. Zeit. 1887, p. 163; id. Rom. Mém. v. p. 20, pl. 1. f. 8; Staud. Cat. Lep. pal. p. 147.

Head and thorax pale brownish ochreous; abdomen ochreous white. Fore wing pale ochreous brown with very slight dark irroration; no trace of the subbasal, ante- and postmedial lines;

orbicular and reniform very faintly defined by brown, the former rather oblique elliptical; subterminal line defined by a slight brown shade on inner side, excurved below costa and at middle; a very fine waved dark terminal line; cilia ochreous at base, brownish at tips. Hind wing whitish tinged with ochreous brown especially on terminal half; cilia white; the underside white with a faint brown tinge.

Hab. W. Turkestan, Turcomania, Aschabad, 1 ♂, 1 ♀. *Exp.* 32 millim.

*3314. Pseudohadena contumax. (Plate CXIX. fig. 14.)

Namangana contumax, Püng. Iris, xv. p. 151, pl. 5. f. 17 (1902).

♂. Head and thorax brownish ochreous; palpi with the 2nd joint fuscous at sides; abdomen whitish tinged with brown. Fore wing greyish suffused with pale red-brown and slightly irrorated with dark brown; subbasal line represented by two minute points on costa; antemedial line represented by two minute points on costa and one below the cell; claviform and orbicular absent; reniform defined by a few brown scales; postmedial line hardly traceable, represented by some brown scales, oblique below vein 4; subterminal line hardly traceable, defined on inner side by small brown spots between vein 5 and submedian fold, slightly angled outwards at vein 7 and excurved at middle; a terminal series of minute brown lunules. Hind wing pale reddish brown; cilia yellowish white; the underside nearly pure white.

The claw-like spines on 1st joint of fore tarsi rather fine.

Hab. Mongolia, W. Gobi Desert, type † ♂ in Coll. Püngeler. *Exp.* 30 millim.

*3315. Pseudohadena armata.

Hadena armata, Alph. Stett. ent. Zeit. 1887, p. 170; id. Rom. Mém. v. p. 163, pl. 7. f. 5, & vi. p. 35, pl. 2. f. 6, *a*, *b*; Staud. Cat. Lep. pal. p. 170.

Head, thorax, and abdomen grey tinged with brown. Fore wing whitish tinged with yellowish brown; subbasal line represented by a slight brown striga from costa; antemedial line slightly defined by whitish on inner side, oblique, sinuous; claviform small, faintly defined by brown; orbicular and reniform small, whitish slightly defined by brown, the former elliptical; postmedial line slight, brown defined by whitish on outer side, bent outwards below costa, excurved to vein 4, then oblique; subterminal line whitish defined on inner side by slight fuscous suffusion, excurved below vein 7 and at middle; a terminal series of slight dark striæ. Hind wing grey, the termen tinged with fuscous; cilia whitish.

Hab. Turkestan; W. China. *Exp.* 44 millim. This species is unknown to me.

3316. **Pseudohadena jordana.** (Plate CXIX. fig. 15.)

Orthosia jordana, Staud. Iris, xii. p. 376, pl. 5. f. 12 (1899); id. Cat. Lep. pal. p. 205.

♂. Head and thorax white tinged with reddish ochreous; abdomen white tinged with brown. Fore wing white suffused with reddish ochreous; subbasal line represented by a brown point on costa; antemedial line indistinct, oblique, waved, with browner spots at costa and below cell; claviform and orbicular obsolete; medial line represented by a brown bar from costa, almost obsolete below discal fold; reniform represented by a brown mark in centre, more distinct below; postmedial line bent outwards below costa, then indistinct, somewhat dentate, incurved below vein 4; a slight brown terminal line. Hind wing white tinged with reddish ochreous; a curved postmedial line ending near tornus; the underside whiter.

Hab. PALESTINE, 1 ♂. *Exp.* 38 millim.

Genus **LUPERINA.**

	Type.
Luperina, Boisd. Ind. Meth. p. 77 (1829)	*dumerili.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and fringed with hair in front, the 3rd short, oblique; frons smooth; eyes large, rounded; antennæ of male ciliated; head and thorax clothed with hair and hair-like scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with lateral fringes of hair but without crests. Fore wing rather narrow, the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Hind wing white.
- *a*. Fore wing with crimson markings ..... *jelsci.*
- *b*. Fore wing without crimson markings.
  - a^1. Fore wing with veins 4, 3 defined on each side by white streaks ..... *stipata.*
  - b^1. Fore wing with veins 4, 3 not defined by white streaks.
    - a^2. Fore wing grey-white suffused with brown ..... *niccerli.*
    - b^2. Fore wing with the ground-colour ochreous.
      - a^3. Fore wing suffused with dark brown.
        - a^4. Fore wing with the medial area darker than the ground-colour ..... *burgessi.*
        - b^4. Fore wing with the medial area concolorous.
          - a^5. Fore wing with dark suffusion before subterminal line ..... *postivata.*
          - b^5. Fore wing without dark suffusion before subterminal line ..... *testacea.*
      - b^3. Fore wing suffused with rufous.
        - a^4. Fore wing with the medial area darker than the ground-colour ..... *dumerili.*
        - b^4. Fore wing with the medial area not darker than the ground-colour.
          - a^5. Fore wing with the reniform a small white lunule ..... *imbellis.*

b^5. Fore wing with the reniform not represented by a small white lunule.
a^6. Fore wing with the lines distinct ..... *rubella.*
b^6. Fore wing with the lines obsolescent ..... *dayensis.*
B. Hind wing suffused with ochreous or brown.
a. Fore wing more or less suffused with rufous or red-brown.
a^1. Fore wing with the cell and areas below and beyond it to subterminal line not suffused with fuscous.
a^2. Fore wing with the medial area concolorous ..... *ferrago.*
b^2. Fore wing with the outer half of medial area slightly tinged with reddish ..... *popofensis.*
c^2. Fore wing with the costal half of medial area darker than the ground-colour.
a^3. Fore wing with the orbicular and reniform pale ochreous ..... *venosa.*
b^3. Fore wing with the orbicular and reniform concolorous defined by whitish.
a^4. Fore wing without greyish tinge.
a^5. Fore wing with dark streaks on the veins of terminal area ..... *radicosa.*
b^5. Fore wing with the terminal area dark except at apex ..... *hedeni.*
b^4. Fore wing with a greyish tinge ..... *terrago.*
d^2. Fore wing with the whole medial area darker than the ground-colour.
a^3. Fore wing with the reniform with dark centre defined by whitish ..... *subaquila.*
b^3. Fore wing with the reniform with pale centre ..... *innota.*
b^1. Fore wing with the cell and areas below and beyond it to subterminal line suffused with fuscous ..... *trigona.*
b. Fore wing grey suffused with dark brown.
a^1. Fore wing with the veins prominently streaked with white ..... *vicaria.*
b^1. Fore wing with the veins not streaked with white ..... *virguncula.*
c. Fore wing purplish brown.
a^1. Fore wing with pale streak in submedian fold from base to near postmedial line ..... *extensa.*
b^1. Fore wing without pale streak in submedian fold.
a^2. Fore wing with the costal area concolorous ..... *passer.*
b^2. Fore wing with the costal area dark brown except at apex ..... *birnata.*

*3317. Luperina jelsci.

Polia jelskii, Oberth. Ét. Ent. vi. p. 38, pl. 10. f. 11 (1881).

♂. Head and thorax red-brown mixed with crimson and white; palpi with some white in front at extremities of 1st and 2nd joints; tarsi ringed with white; abdomen with the basal half white, the terminal half red-brown, the anal tuft whitish, the ventral surface white mixed with rufous. Fore wing brown tinged with grey-green and slightly irrorated with black, the base white, the inner area whitish to the antemedial line; a double waved black subbasal line from costa to vein 1 with some crimson on its outer edge; an indistinct double oblique slightly sinuous antemedial line filled in with some white and defined by crimson on outer side from subcostal nervure to above vein 1, the inner margin beyond it crimson; orbicular a small round white spot defined by black with a crimson

bar beyond it, the reniform narrow, white defined by black and with some crimson before and beyond it; an indistinct medial line excurved from costa to median nervure, then sinuous; postmedial line bent outwards and almost obsolete towards costa, then represented by a series of lunulate black spots with crimson spots beyond them, the black line double to vein 6, incurved below vein 4, some white points beyond it on costa; a large elliptical white subterminal patch from below costa to above vein 5, small spots above veins 3, 2 and a larger irregular spot below vein 2; some whitish just before termen towards apex followed by a series of crimson spots and a white point above tornus; cilia red-brown and crimson intersected with white. Hind wing pure white; the termen suffused with brown from apex to vein 2 and with a brownish mark at vein 1; cilia white with series of brown marks to vein 2 and at vein 1; the underside with the costal area irrorated with red-brown, a diffused dark bar from costa to middle of cell, small discoidal spot, somewhat diffused minutely waved postmedial line, and terminal series of small lunules.

Hab. Ecuador, Loja in Coll. Dognin; Peru, Punamarca. *Exp.* 44 millim. Thorax much worn in specimen examined.

3318. Luperina stipata. (Plate CXIX. fig. 16.)

Hadena stipata, Morr. Proc. Ac. Nat. Sci. Phil. 1875, p. 64; Smith, Cat. Noct. N. Am. p. 131.

Head and thorax greyish ochreous suffused with fuscous brown; frons with blackish lateral bars; tegulæ with medial black line; fore tarsi blackish with pale rings; abdomen ochreous white tinged with brown towards extremity, the ventral surface irrorated with brown. Fore wing whitish suffused with pale purplish brown, the veins with slight dark streaks, the median nervure and base of veins 4, 3 streaked with white; a sinuous black streak below base of cell; subbasal line represented by some black scales below costa; a strong black streak above inner margin before the antemedial line, which is almost obsolete and only represented by a few black scales from costa to submedian fold, then stronger, angled strongly inwards on vein 1 and outwards above inner margin; claviform replaced by a strong black fascia from ante- to postmedial lines; orbicular minute, defined by black, very oblique elliptical; reniform small defined by black and its centre by blackish, angled inwards on median nervure to below orbicular; postmedial line indistinctly double filled in with whitish, obsolescent towards costa, bent outwards below costa, oblique to vein 4, then inwardly oblique, some whitish points beyond it towards costa, veins 4, 3 beyond it defined on each side by white streaks to termen; subterminal line indistinct, ochreous white defined on inner side by dentate blackish marks at middle, angled outwards at vein 7 and to termen at

veins 4, 3, the area beyond it tinged with fuscous except at apex; a terminal series of small black lunules. Hind wing uniform ochreous white; the underside with the costal area slightly irrorated with brown.

Hab. U.S.A., Maine, Kittery Point, 1 ♂, 1 ♀, Massachusetts, Wisconsin, Illinois, Minnesota, Colorado. *Exp.* 40 millim.

3319. Luperina niccerli.

Apamea nickerlii, Frr. Neue Beitr. v. p. 140, pl. 466. f. 4 (1848); Herr.-Schäff. Eur. Schmett., Noct. i. 565; de Graslin, Ann. Soc. Ent. Fr. (4) iii. p. 309, pl. 8. f. 8; Staud. Cat. Lep. pal. p. 168.

Head and thorax grey-white mixed with dark brown; sides of palpi and frons dark brown; tarsi brown ringed with white; abdomen whitish tinged with brown. Fore wing grey-white suffused with brown and with slight dark irroration; subbasal line represented by two slight dark striæ from costa; an oblique blackish streak above inner margin before the antemedial line, which is blackish defined by white on inner side, interrupted, angled outwards below costa, in submedian interspace and above inner margin; claviform represented by a small black wedge-shaped mark with dark streak from it to postmedial line; orbicular and reniform with white annuli defined by black, the former very small, irregularly rounded, with blackish spot before it in cell, the latter angled inwards on subcostal and median nervures and with black spot on its outer edge; a very indistinct waved medial line; postmedial line indistinctly double filled in with white, slightly bent outwards below costa, excurved just beyond reniform to vein 4, then incurved and touching lower edge of reniform, some white points beyond it on costa; subterminal line indistinct, whitish with slight brown marks on its inner side at middle, somewhat excurved below vein 7 and at middle and angled inwards in submedian fold; a terminal series of small black lunules; cilia with a dark line near base. Hind wing pure white; the underside with the costal area slightly irrorated with brown, a dark discoidal spot and terminal series of small black lunules from apex to vein 2.

Hab. France, Sand Coll.; Germany, Bohemia, Zeller, Frey, and Leech Colls. *Exp.* 32–38 millim.

3320. Luperina burgessi. (Plate CXIX. fig. 17.)

Luceria burgessi, Morr. Bull. Buff. Soc. Nat. Sci. ii. p. 109 (1874); Smith, Cat. Noct. N. Am. p. 132.
Hadena discors, Grote, Trans. Kansas Ac. Sci. vii. p. 64 (1881).

♂. Head and thorax dark brown mixed with grey; metathoracic crest blackish; tarsi blackish ringed with white; abdomen ochreous white, the ventral surface white irrorated with brown. Fore wing

ochreous white suffused with reddish brown, the medial and terminal areas darker grey-brown; a slight black streak below base of cell; subbasal line represented by black striæ from costa and cell; antemedial line double, the inner line indistinctly waved, somewhat oblique; claviform small, defined by black and with black streak from it to postmedial line; orbicular and reniform defined by black, the former somewhat oblique elliptical, the latter indistinctly defined on outer side; an indistinct waved medial line; postmedial line double filled in with whitish, bent outwards below costa, then minutely dentate, incurved below vein 4, some pale points beyond it on costa; subterminal line slight, white, defined on inner side at middle by indistinct dentate brown marks, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of small black spots. Hind wing white, the veins of terminal half and the terminal area from apex to vein 2 suffused with brown; cilia white; the underside with the costal area irrorated with brown, a slight discoidal lunule and postmedial series of slight dark streaks on the veins.

Hab. U.S.A., Massachusetts, Tuckernuck I., 1 ♂ type, Nebraska, Arizona. *Exp.* 42 millim.

3321. **Luperina posticata.** (Plate CXIX. fig. 18.)

Orthosia posticata, Harv. Bull. Buff. Soc. Nat. Sc. iii. p. 8 (1875); Smith, Cat. Noct. N. Am. p. 219.

Perigea veterata, Smith, Trans. Am. Ent. Soc. xxi. p. 62, pl. 3. f. 7 (1894); Dyar, Cat. Lep. N. Am. p. 111.

♂. Head, thorax, and abdomen ochreous; sides of palpi and frons blackish; tarsi blackish ringed with white. Fore wing ochreous irrorated with brown, the terminal area more suffused with brown; subbasal line represented by a small black spot on costa and striga from cell; antemedial line with small black spot on costa, then brown, indistinct and rather diffused, incurved below submedian fold; orbicular represented by a faint brownish spot; reniform fuscous brown, angled inwards on median nervure; a very indistinct waved medial line; postmedial line with small black spot on costa, then indistinct, bent outwards below costa, then dentate, oblique below vein 4: subterminal line defined by brown suffusion on inner side, dentate, angled outwards at vein 7 and somewhat excurved at middle; a terminal series of slight blackish lunules; cilia ochreous with a faint brown line through them. Hind wing pure white; the underside with terminal series of slight brown lunules.

♀. Fore wing with the lines more distinct.

Hab. U.S.A., Texas, 1 ♂ type, Colorado, Glenwood Springs, 1 ♂, California, Sauzalito, 1 ♀. *Exp.* ♂ 40, ♀ 46 milllim.

3322. Luperina testacea.

Noctua testacea, Schiff. Wien. Verz. p. 81 (1776); Hübn. Eur. Schmett., Noct. f. 139; Dup. Lép. Fr. vi. p. 133, pl. 81. f. 4; Steph. Ill. Brit. Ent., Haust. iii. p. 5; Staud. Cat. Lep. pal. p. 168.
Noctua unca, Haw. Lep. Brit. p. 194 (1809).
Noctua lunato-strigata, Haw. Lep. Brit. p. 194 (1809).
Noctua x-notata, Haw. Lep. Brit. p. 194 (1809).
Luperina gueneei, Doubl. Entom. Ann. 1864, p. 123.

Head and thorax rufous, the hairs tipped with whitish; sides of palpi and frons blackish; tarsi blackish ringed with white; abdomen whitish suffused with rufous. Fore wing pale rufous with slight blackish irroration; subbasal line represented by two slight blackish striæ from costa; antemedial line double, the outer line strong, black, excurved in interspaces and angled inwards on the veins; claviform represented by a small black wedge-shaped mark; orbicular and reniform small with faint whitish annuli very incompletely defined by black, the former oblique elliptical, the latter with straight inner edge; an indistinct diffused medial line, oblique frrm costa to median nervure; postmedial line double filled in with whitish, the outer line very indistinct, slightly bent outwards below costa, oblique to vein 6, then dentate, excurved to vein 4, then incurved and emitting a short black streak in submedian interspace to medial line, some white points beyond it on costa; subterminal line very indistinct, pale, excurved below vein 7 and at middle, the area beyond it darker brown except at apex; a terminal series of small black lunules; cilia brown intersected with yellowish and with yellowish line at base. Hind wing pure white with fine brown terminal line except towards tornus; cilia tinged with rufous at tips towards apex; the underside with the costal area slightly tinged with rufous.

Ab. 1. *gueneei*. Fore wing paler, more irrorated with brown, the lines less black.

Ab. 2. Much darker brown.—Scotland.

Hab. Britain, Scotland, Leech Coll., England, Leech Coll.; France, Leech Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria, Frey Coll.; Hungary; Switzerland; Italy; Dalmatia; S. Sweden; Armenia; Asia Minor, Pontus. *Exp.* 40–42 millim.

Larva. Meyr. Brit. Lep. p. 112; Barrett, Lep. Brit. iv. p. 336, pl. 173.

Much wrinkled, pinkish ochreous; warts absent; head and thoracic plate brownish yellow; anal plate subconcave. Food-plants: roots of grasses. 5–7.

3323. Luperina dumerili.

Noctua dumerilii, Dup. Lép. Fr. vi. p. 277, pl. 90. f. 4 (1826); Herr.-Schäff. Eur. Schmett., Noct. f. 101; Barrett, Lep. Brit. iv. p. 337, pl. 174. f. 1; Staud. Cat. Lep. pal. p. 169.
Noctua amentata, Germ. Faun. Ins. Eur. xxii. pl. 16 (1842).

Luperina desyllesi, Boisd. Ind. Meth. p. 113 (1840).
Apamea diversa, Staud. Iris, iv. p. 284 (1891).
Apamea sancta, Staud. Iris, iv. p. 285 (1891).

Head and thorax ochreous white mixed with rufous; tarsi banded with brown; abdomen ochreous white tinged with rufous. Fore wing yellowish white tinged with rufous, the medial area, postmedial costal area, and terminal area except at apex rufous; subbasal line represented by two black striæ from costa; some black scales below cell and above inner margin near base; antemedial line double, the outer line black, the inner indistinct, curved and waved; the medial area with some blackish irroration in cell and submedian interspace; claviform absent; orbicular and reniform pale yellow defined by brown, the former narrow, very oblique elliptical, the latter narrow and angled inwards on median nervure; postmedial line double filled in with yellow, the outer line indistinct, slightly bent outwards below costa, then minutely dentate and produced to short streaks on the veins, incurved below vein 4, some yellow points beyond it on the veins; subterminal line only defined by the contrast between the yellow and rufous areas, excurved

Fig. 92.—*Luperina dumerili*, ♂. ½.

below vein 7 and at middle; a terminal series of minute black lunules; cilia rufous with yellow line at base and dark marks at tips. Hind wing white tinged with yellow; the underside with the costal area irrorated with rufous, a small discoidal spot.

Ab. 1. *desyllesi*. Fore wing darker with hardly any rufous tinge, the basal and postmedial areas hardly paler.

Ab. 2. *sancta*. Fore wing with the medial area darker red-brown, the orbicular and reniform with white centres.

Ab. 3. *diversa*. Fore wing paler with less rufous suffusion on medial and terminal areas, the markings less distinct.—Armenia, Pontus, Mesopotamia.

Hab. Britain, England; France, Zeller, Frey, and Leech Colls.; Italy; Dalmatia; Armenia, 1 ♂, 1 ♀; Asia Minor, Pontus; Syria, Antioch; Palestine, 1 ♂; Mesopotamia. *Exp.* 30–38 millim.

*3324. Luperina imbellis. (Plate CXIX. fig. 19.)

Mythimna imbellis, Staud. Stett. ent. Zeit. 1888, p. 28; id. Cat. Lep. pal. p. 194.

♀. Head and thorax ochreous mixed with rufous; abdomen

ochreous white slightly tinged with brown. Fore wing ochreous irrorated with rufous; subbasal line rufous, waved, from costa to vein 1; antemedial line rufous, waved, produced on inner side to slight streaks on the veins; claviform and orbicular absent; reniform a rather narrow white lunule slightly defined by brown; a somewhat diffused medial brown line angled outwards below the cell; postmedial line rufous, slightly bent outwards below costa, then produced to slight streaks on the veins, excurved to vein 4, then oblique; subterminal line formed of rufous scales, angled outwards at vein 7 and somewhat excurved at middle, the area beyond it grey-brown irrorated with white except at apex; cilia ochreous mixed with rufous. Hind wing yellowish white irrorated with brown; a slight discoidal lunule, curved postmedial line, and fine terminal line; the underside with the postmedial line more sinuous and crenulate towards costa.

Hab. W. Turkestan, Sarawschan, Merv in Coll. Püngeler. *Exp.* 30 millim.

3325. Luperina rubella.

Orthosia rubella, Dup. Lép. Fr., Suppl. iii. p. 249, pl. 23. f. 1 (1835); Herr.-Schäff. Eur. Schmett., Noct. ff. 100, 431–2; Frr. Neue Beitr. pl. 520. f. 2; Mill. Icones, ii. pl. 77. f. 1; Staud. Cat. Lep. pal. p. 169.
Apamea rhusia, Püng. Iris, xii. p. 293, pl. 9. f. 11 (1899).

Head and thorax white suffused in parts with bright rufous; sides of palpi and frons tinged with fuscous; abdomen white, the anal tuft tinged with rufous. Fore wing white tinged with rufous, the medial area suffused with bright rufous; a slight waved rufous subbasal line from costa to submedian fold; antemedial line rufous, oblique, waved, excurved below cell and above inner margin; claviform absent; orbicular and reniform with slight white annuli indistinctly defined by rufous, the former small, oblique elliptical, the latter constricted at middle and with some fuscous in lower part; a medial deep rufous shade, oblique from costa to median nervure; postmedial line rufous slightly defined by whitish on outer side, slightly bent outwards below costa, then produced to short streaks on the veins, obliquely excurved to vein 4, then incurved; subterminal line indistinct, whitish slightly defined by rufous on inner side and with rufous shade before it on costa, excurved below vein 7 and at middle; a terminal series of slight black striæ; cilia brownish at tips. Hind wing pure white, the cilia mixed with brownish at tips; the underside with the costal area irrorated with rufous, a diffused dark postmedial bar from costa to vein 7.

Ab. 1. *rhusia*. Larger and darker; fore wing grey-brown mixed with rufous.—Turcomania.

Hab. S.E. France, Zeller, Frey, and Leech Colls; Switzerland, Valais; Istria; Dalmatia; Croatia; Asia Minor, Pontus; W. Turkestan, Turcomania. *Exp.* 38–42 millim.

Larva. Kirby, Butt. Moths Eur. p. 219; Hffmn. Raup. p. 296.
Yellowish grey suffused with greenish in front and yellowish behind. Food-plants: roots of grasses.

*3326. Luperina dayensis.

Luperina dayensis, Oberth. Ét. Ent. vi. p. 86, pl. 11. f. 9 (1881); Staud. Cat. Lep. pal. p. 169.

♂. Head and thorax yellowish white tinged with rufous; abdomen white faintly tinged with rufous. Fore wing yellowish white tinged with rufous; subbasal line absent; antemedial line very indistinct, rufous, oblique from costa to submedian fold, traces of a minute claviform very faintly defined by rufous; orbicular and reniform with very faint white annuli, the former very narrow and oblique; postmedial line very indistinct, rufous, bent outwards below costa, excurved to vein 4, then oblique; faint traces of a diffused rufous subterminal line; a terminal series of faint minute rufous lunules; cilia pale rufous. Hind wing pure white with slight rufous terminal line; the underside with the costal area faintly tinged with rufous.

Hab. Algeria in Coll. Püngeler, Daya. *Exp.* 38 millim.

3327. Luperina ferrago.

Xanthia ferrago, Ev. Bull. Mosc. 1837, vi. p. 41; id. Faun. Volg. Ur. p. 276; Frr. Neue Beitr. iv. p. 133, pl. 364. ff. 3, 4; Herr.-Schäff. Eur. Schmett., Noct. f. 41; Staud. Cat. Lep. pal. p. 173.
Cosmia caltheago, Boisd. Ind. Meth. p. 143 (1840).

Head and thorax pale rufous; abdomen whitish tinged with rufous. Fore wing pale rufous; an indistinct rufous antemedial line, oblique from costa to submedian fold, then waved; claviform narrow, faintly defined by rufous; orbicular and reniform faint, pale, undefined, the former small, oblique elliptical, the latter with slight fuscous mark in lower part and somewhat angled inwards on median nervure; traces of a medial line diffused and oblique from costa to median nervure; postmedial line rufous, slightly bent outwards below costa, then dentate, excurved to vein 4, then incurved; the postmedial area somewhat paler except at costa; subterminal line very indistinct, pale, slightly defined by rufous on inner side, somewhat excurved below vein 7 and at middle; cilia with slight whitish line at base. Hind wing white almost uniformly tinged with rufous; cilia whiter; the underside white slightly tinged with rufous.

Hab. Russia, Urals, Zeller, Leech, and d'Emmich Colls.; Armenia; Asia Minor, Pontus, Taurus, 1 ♂; Syria, Leech Coll., 3 ♂; W. Siberia, Altai; W. Turkestan, Issyk-Kul; E. Turkestan, Thian-Schan Mts. *Exp.* 31–42 millim.

*3328. **Luperina popofensis.** (Plate CXIX. fig. 20.)

Ommatostola popofensis, Smith, P. Wash. Ac. ii. p. 492 (1900) ; Dyar, Cat. Lep. N. Am. p. 174.

♀. Head and thorax dull ochreous yellow, the head slightly darker; abdomen pale yellowish. Fore wing dull ochreous yellow, the outer half of medial area with a reddish tinge; subbasal and antemedial lines and claviform obsolete; orbicular with very faint pale outline, elliptical; reniform defined by white, constricted at middle and angled outwards on median nervure, the lower part filled in with black; postmedial line represented by some blackish scales on the veins, excurved to vein 4, then oblique; subterminal line pale, faintly defined on outer side by brown, slightly angled outwards at vein 7; the veins of terminal area with slight dark streaks; cilia fuscous at tips. Hind wing fuscous; the cilia yellow; the underside yellowish with dark discoidal point.

Hab. Alaska, Popof I. *Exp.* 38 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

3329. **Luperina venosa.** (Plate CXIX. fig. 21.)

Cosmia venosa, Smith, J. N.Y. Ent. Soc. xi. p. 21 (1903).

Head and thorax red-brown mixed with greyish; tegulæ yellow and reddish at base; tarsi brown ringed with yellow; abdomen whitish suffused with brown. Fore wing yellow suffused with rufous and slightly irrorated with brown, the veins streaked with brown; subbasal line represented by brown striæ from costa and cell; antemedial line red-brown, excurved and slightly angled inwards on subcostal nervure and vein 1; orbicular and reniform pale ochreous tinged with rufous and slightly defined by brown, the former round, the latter with curved brown line on discocellulars; a curved diffused dark brown medial line; postmedial line red-brown, bent outwards below costa, oblique to vein 6, then very minutely dentate and inwardly oblique; subterminal line slightly defined on inner side by red-brown and with diffused red-brown patch before it on costal area, somewhat angled outwards at vein 7 and excurved at middle; slightly angled inwards in submedian fold; a fine waved brown terminal line; cilia red-brown at tips. Hind wing ochreous yellow slightly tinged with brown except at termen; a fine brown terminal line; the underside ochreous white, the costal and terminal areas irrorated with brown and the former tinged with rufous, a slight brown discoidal lunule and curved postmedial line with dark points on the veins.

Hab. U.S.A., Oregon (*Walsingham*), 2 ♀. *Exp.* 40 millim.

3330. **Luperina radicosa.** (Plate CXIX. fig. 22.)

Hadena radicosa, Græs, Berl. ent. Zeit. 1892, p. 225; Staud. Cat. Lep. pal. p. 174.

♂. Head and thorax bright rufous; abdomen brownish ochreous

with the anal tuft rufous. Fore wing ochreous tinged with rufous, the medial area suffused with red-brown to just below cell; subbasal line represented by a slight brown striga from costa; antemedial line indistinct, waved, oblique from costa to submedian fold; claviform represented by a dark brown streak; orbicular pale defined by brown except above and with a few white scales on its edges, somewhat oblique elliptical; reniform with fuscous centre and yellowish-white annulus defined by brown, angled inwards on median nervure; traces of a curved medial line; postmedial line dark, slightly bent outwards below costa, then produced to short streaks on the veins, excurved to vein 4, then incurved, some pale points beyond it on costa; the postmedial area tinged with rufous at costa; subterminal line indistinct, pale with slight red-brown marks on its inner edge, excurved below vein 7 and at middle; the terminal area with some dark suffusion and dark streaks on the veins; a terminal series of slight black lunules; cilia brownish intersected with rufous. Hind wing ochreous white slightly tinged with brown especially on terminal area, the veins rather darker; the underside with the costal area irrorated with brown, a dark discoidal spot and curved postmedial line with minute dark streaks on the veins.

Hab. E. Siberia, Amurland, Pokrofka, 1 ♂. *Exp.* 44 millim. Type † ♂ in Coll. Püngeler. This may be an aberration of *L. hedeni*.

3331. **Luperina hedeni.** (Plate CXIX. fig. 23.)

Hadena hedeni, Græs. Berl. ent. Zeit. 1888, p. 333; Staud. Cat. Lep. pal. p. 174.

♂. Head and thorax fulvous to purplish red; abdomen fulvous yellow. Fore wing fulvous to pale purplish red, the medial area irrorated with fuscous to median nervure; subbasal line represented by a slight dark striga from costa; antemedial line indistinct, dark, waved, somewhat oblique; claviform narrow defined by red-brown; orbicular and reniform defined by brown, the former pale rufous, oblique elliptical, the latter with some fuscous in centre and white annulus, somewhat constricted at middle; an indistinct dark medial line, oblique below the cell; postmedial line dark, bent outwards below costa, then produced to slight dark streaks on the veins, excurved to vein 5, then obliquely incurved, some pale points beyond it on costa; subterminal line indistinct, pale, slightly defined on inner side by fuscous or purplish red, excurved below vein 7 and at middle; the terminal area with diffused dark streaks on the veins; a terminal series of small black lunules; cilia fuscous or rufous with fuscous tips. Hind wing ochreous yellow with slight dark discoidal lunule and curved postmedial line; the underside with the costal area tinged with rufous, the discoidal spot black.

Hab. E. Siberia, Amurland, 2 ♂. *Exp.* 44 millim.

3332. Luperina terrago.

Hadena terrago, Alph. Rom. Mém. ix. p. 334, pl. 14. f. 9 (1897); Staud. Cat. Lep. pal. p. 173.

♂. Head and thorax deep rufous; palpi, frons, and pectus browner; legs pale; abdomen pale brown, the lateral and anal tufts rufous. Fore wing pale bright rufous, the medial area to submedian fold and terminal area red-brown; antemedial line red-brown, oblique from costa to submedian fold, then waved; claviform absent; orbicular small, white, diffused and irregular; reniform small, white with brown centre; postmedial line red-brown, bent outwards below costa, then dentate and produced to short streaks on the veins, excurved to vein 4, then strongly incurved, some whitish points beyond it on costa; subterminal line only defined by the contrast between the postmedial and terminal areas, incurved below vein 7 and at middle; a terminal series of small black lunules; cilia pale rufous, brownish at tips. Hind wing whitish tinged with rufous and suffused with brown, the terminal area rather darker; traces of a discoidal spot and curved postmedial line; cilia pale rufous; the underside whitish tinged with brown, the costal area irrorated with rufous, the discoidal spot and postmedial line more distinct.

♀. Head and thorax greyish rufous; fore wing grey-brown tinged with rufous except on costal area, the veins with dark streaks, stronger at termen; the markings obsolescent and very indistinct, the reniform with whitish mark in lower part.

Hab. Siberia, Verkhoiansk, 1 ♂, Sajan Mts., 1 ♀, Kamschatgar, 1 ♂. *Exp.* 36 millim.

3333. Luperina subaquila. (Plate CXIX. fig. 24.)

Hadena subaquila, Græs. Berl. ent. Zeit. 1892, p. 224; Staud. Cat. Lep. pal. p. 174.

♂. Head and thorax pinkish tinged with whitish; abdomen ochreous, the anal tuft fulvous. Fore wing pale pinkish, the medial area suffused with brown except towards costa and inner margin; subbasal line represented by a slight oblique striga from costa; antemedial line dark, defined by whitish on inner side, minutely waved and oblique from costa to submedian fold, then angled inwards on vein 1; claviform slightly defined by brown; orbicular and reniform slightly defined by fuscous, the former pinkish, V-shaped, open above, the latter with fuscous centre and pinkish annulus on inner side, whitish on outer, somewhat constricted at middle and angled inwards on median nervure; traces of a medial line oblique below the cell; postmedial line dark, bent outwards below costa, then produced to short dark streaks on the veins with white points on them, oblique to vein 4, then inwardly oblique, some white points beyond it on costa; subterminal line very indistinct, pale, faintly defined on inner side by red-brown, somewhat angled outwards at

vein 7 and excurved at middle; the veins of terminal area with slight dark streaks; cilia reddish brown with fine whitish line at base. Hind wing yellowish white with indistinct curved postmedial line; the underside with the costal area tinged with rufous, a dark discoidal spot and sinuous postmedial line.

Hab. E. Siberia, Amurland, Raddefka, 1 ♂. *Exp.* 38 millim. Type † ♂ in Coll. Püngeler.

3334. Luperina innota. (Plate CXIX. fig. 25.)

Luperina innota, Smith, Ann. N.Y. Ac. Sci. xviii. p. 113 (1908).

♂. Head and thorax rufous; abdomen reddish brown with the anal tuft rufous. Fore wing pale greyish rufous with slight dark irroration, the medial area deeper rufous; antemedial line very indistinct, oblique, waved; orbicular pale rufous, very indistinct, round; reniform pale grey slightly defined on inner side by a dark lunule, its inner edge indented by rufous above median nervure; postmedial line very indistinct, bent outwards below costa, then minutely dentate, excurved to vein 4, then incurved; subterminal line slightly defined by rufous on inner side and with rufous patch before it on costa, excurved at vein 7 and middle; a terminal series of slight dark lunules. Hind wing greyish nearly uniformly suffused with fuscous brown; cilia ochreous; the underside grey irrorated with brown, the costal area tinged with ochreous, a small dark discoidal spot and traces of a sinuous postmedial line.

Hab. U. S. A., Wyoming, Yellowstone Park, 1 ♂, Idaho, Arangie, Colorado, Hall Valley, 1 ♂. *Exp.* 36 millim.

*3335. Luperina trigona. (Plate CXIX. fig. 26.)

Luperina trigona, Smith, J. N.Y. Ent. Soc. x. p. 39 (1902); Dyar, Cat. Lep. N. Am. p. 116.

♂. Head and thorax greyish ochreous suffused with red-brown; palpi with the 2nd joint blackish above; frons with lateral black bars; abdomen grey-brown dorsally suffused with fuscous except at base. Fore wing pale greyish ochreous tinged with rufous and slightly irrorated with fuscous, the cell and area below it to submedian fold and beyond it to subterminal line, towards which it extends to costa, strongly suffused with fuscous; subbasal line indistinct, dark, waved, from costa to vein 1; antemedial line obsolete on costal area, then oblique, waved, angled inwards on vein 1; orbicular and reniform reddish ochreous defined by blackish, the former small, rounded, the latter with its lower part filled in with fuscous; traces of a waved medial line; postmedial line indistinct, strongly bent outwards below costa, then dentate, oblique below vein 4, some pale points beyond it on costa; subterminal line only defined by a series of small blackish marks on its inner edge, slightly angled outwards at vein 7 and excurved at middle; a

terminal series of slight dark lunules. Hind wing greyish suffused with fuscous brown except on terminal area; the underside pale grey, the costal area tinged with red-brown, a slight dark discoidal lunule, curved postmedial line, and traces of diffused subterminal line.

Hab. U.S.A. Tennessee, Smith Co. *Exp.* 42–46 millim. This species is unknown to me; figured from a drawing from type in Coll. J. B. Smith.

3336. **Luperina vicaria.** (Plate CXIX. fig. 27.)

Hadena vicaria, Püng. Iris, xv. p. 152, pl. 5. f. 22 (1903).

♂. Head, thorax, and abdomen grey-brown; tarsi banded with fuscous. Fore wing pale grey-brown, the medial area rather darker except towards costa and inner margin, the veins with pale streaks; subbasal line absent; a blackish streak above inner margin before the antemedial line, which is black, interrupted, oblique from costa to submedian fold, then angled inwards on vein 1; claviform represented by a slight blackish mark; orbicular and reniform whitish defined by black, the former very small, oblique elliptical, the latter with straight inner edge and rather irregular outer edge; postmedial line formed of slight dark lunules defined by grey on outer side, slightly bent outwards below costa, then minutely dentate and produced to slight black and white streaks on the veins, oblique below vein 4; subterminal line whitish defined on inner side by somewhat dentate fuscous marks, excurved below vein 7 and somewhat dentate at veins 4, 3; a terminal series of slight black lunules; cilia with a slight dark line near base. Hind wing grey-white nearly evenly suffused with fuscous brown; cilia white; the underside grey-white with small discoidal spot and sinuous postmedial line.

♀. Fore wing paler with more white suffusion.

Hab. W. Turkestan, Turcomania, 1 ♂, 1 ♀. *Exp.* ♂ 40, ♀ 42 millim.

*3337. **Luperina virguncula.** (Plate CXIX. fig. 28.)

Hadena virguncula, Smith, Can. Ent. xxxi. p. 259 (1899); Dyar, Cat. Lep. N. Am. p. 115.

♀. Head and thorax grey mixed with reddish brown; pectus and legs reddish; abdomen grey. Fore wing grey tinged with reddish brown, the medial area to median nervure, the postmedial costal area and terminal area slightly darker; subbasal line represented by a few black scales; antemedial line double, the inner line very indistinct, filled in with whitish, oblique, waved, angled inwards on vein 1; hardly a trace of the claviform; orbicular represented by a few blackish scales; reniform large with whitish

annulus defined by black, somewhat quadrate, postmedial line double, slightly bent outwards below costa, then dentate, excurved to vein 4, then incurved; subterminal line pale, defined on inner side by a fuscous shade, nearly evenly curved; a terminal series of small black lunules. Hind wing whitish suffused with fuscous; cilia whitish; the underside with dark discoidal spot and postmedial line.

Hab. U.S.A., Colorado, Garfield Co. *Exp.* 46 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

*3338. **Luperina extensa.** (Plate CXIX. fig. 29.)

Luperina extensa, Smith, J. N.Y. Ent. Soc. xiii. p. 203 (1905).

♂. Head and thorax dull brown mixed with ochreous, the palpi, frons, and base of tegulæ more ochreous; abdomen ochreous tinged with brown. Fore wing dull brown suffused over ochreous; an ochreous streak in submedian fold from base to near subterminal line, defined by black below at base; subbasal line absent; antemedial line represented by some black scales on the paler areas, a black streak before it above inner margin; claviform absent; orbicular and reniform ochreous defined by black, the former very narrow and oblique, the latter rather narrow, dilated below; postmedial line indistinct, dark brown becoming blackish towards inner margin and slightly defined by ochreous on outer side, bent outwards below costa, excurved to vein 4, then oblique and somewhat sinuous; subterminal line represented by a series of ochreous lunules defined on inner side by dentate black marks and by slight blackish marks on outer, excurved below vein 7 and at middle; a terminal series of blackish lunules; cilia ochreous. Hind wing ochreous tinged with brown, the terminal area darker; cilia pale; the underside ochreous white, the costal and apical areas irrorated with brown, a discoidal spot and punctiform postmedial line.

Hab. Canada, Assiniboia, Regina. *Exp.* 40 millim. This species is unknown to me; figured from a drawing from type in Coll. J. B. Smith.

3339. **Luperina passer.** (Plate CXIX. fig. 30.)

Mamestra passer, Guen. Noct. i. p. 195 (1852); Smith, Cat. Noct. N. Am. p. 121.
Agrotis incallida, Wlk. x. 330 (1856).
Luceria loculata, Morr. Bull. Buff. Soc. Nat. Sci. ii. p. 110 (1874).
Luceria conspicua, Morr. Bull. Buff. Soc. Nat. Sci. ii. p. 111 (1874).

Head and thorax red-brown mixed with fuscous and some grey; tegulæ with traces of a dark medial line; abdomen grey-brown, the anal tuft tinged with ochreous. Fore wing reddish brown suffused with purplish fuscous; a more or less developed diffused black

streak below base of cell; subbasal line represented by a slight dark striga from costa; antemedial line indistinct, waved, oblique; claviform small, narrow, strongly defined by black; orbicular and reniform strongly defined by black, the former small, round, open above, the latter with its centre partly defined by black and its lower extremity emitting short streaks; traces of a waved medial line; postmedial line indistinctly double, bent outwards below costa, then very minutely waved, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line indistinct, pale, slightly defined by fuscous on inner side, excurved below vein 7 and at middle, the area beyond it rather darker; a terminal series of small black lunules; cilia fuscous with a slight pale line at base. Hind wing ochreous whitish suffused with brown, the veins and terminal area darker; cilia ochreous white; the underside ochreous white, the costal and terminal areas irrorated with brown, a dark discoidal spot and curved postmedial line.

Ab. 1. *conspicua*. Fore wing with the inner and postmedial areas more ochreous.

Hab. Newfoundland; Canada (*Norman*), 1 ♂, Alberta, Calgary (*Wolley-Dod*), 1 ♂; U.S.A., Massachusetts, New York, Trenton Falls (*Doubleday*), 2 ♂, 1 ♀, type and type *incallida*, Evans Center (*Grote*), 4 ♂, type *loculata*, Connecticut, Illinois, Chicago, 1 ♂, 1 ♀, Oregon, Colorado, Berkeley (*Oslar*), 1 ♀. *Exp.* 38–44 millim.

3340. Luperina birnata. (Plate CXIX. fig. 31.)

Hadena birnata, Smith, Ann. N.Y. Ac. Sci. xviii. p. 113 (1908).

♂. Head and thorax dark purplish brown, the vertex of head and tips of tegulæ with some yellowish hair mixed; abdomen fuscous brown. Fore wing pale brown, the costal half to postmedial line, a quadrate patch on postmedial part of costa and the terminal area except at apex dark brown irrorated with blackish; subbasal line represented by a pale spot on costa; antemedial line pale and just traceable on the dark area, then obsolete; claviform absent or represented by a few black scales; orbicular faintly defined by black, moderate, irregular; reniform rather pale, incompletely defined, with some black scales on its edges below and at lower extremity; postmedial line indistinct, double at costa, bent outwards below costa and incurved below vein 4; subterminal line defined by the contrast between the postmedial and terminal areas, angled inwards in discal and submedian folds; a terminal series of small black lunules; cilia intersected with yellow. Hind wing dull ochreous or tinged with fuscous; the underside ochreous grey, the costal area darker, a dark discoidal spot.

Hab. Newfoundland, 1 ♂; ? Canada, New Brunswick, St John. *Exp.* 28–33 millim.

Genus **TRICHOPLEXIA**, nov.

Type, *T. exornata.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and fringed with hair in front, the 3rd short; frons smooth; eyes large, rounded; antennæ of male ciliated; head and thorax clothed with hair only, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal crests on basal segments, clothed with rough hair and with lateral fringes of hair. Fore wing rather elongate, the apex rounded, the termen obliquely curved and crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing bright rufous..... *contradicta.*
B. Fore wing dull purplish rufous..... *exornata.*

3341. Trichoplexia contradicta.

Hadena contradicta, Smith, Ent. News, Philad. vii. p. 28 (1896); Dyar, Cat. Lep. N. Am. p. 116.

♂. Head and thorax bright rufous; palpi fuscous at sides; frons with lateral blackish bars; antennæ fuscous; tarsi black ringed with purplish pink; abdomen rufous, pale at base. Fore wing bright rufous, the medial and terminal area except at apex slightly tinged with purplish and irrorated with black, the veins with some white scales; a slight black streak below base of cell; subbasal line waved, from costa to submedian fold; antemedial line strong, black, angled outwards below costa, then excurved;

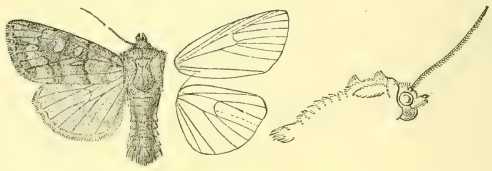


Fig. 93.—*Trichoplexia contradicta*, ♂. ½.

claviform narrow, slightly defined by black; orbicular and reniform rather pale, slightly defined by black, the former round, the latter with black mark on its inner edge; an indistinct curved medial line; postmedial line strong, black, bent outwards below costa, oblique to vein 5, then incurved and minutely waved, some pale points beyond it on costa; subterminal line indistinct, pale, excurved below vein 7 and at middle, angled inwards at discal and submedian folds, the veins beyond it with slight black streaks; a terminal series of small black lunules; cilia fuscous intersected

with rufous. Hind wing grey tinged with rufous and irrorated with brown; a discoidal point, diffused postmedial and subterminal bands and dark terminal line; cilia bright rufous; the underside pale, the costal and terminal areas suffused with purplish pink, a dark discoidal point and strong curved postmedial line.

Hab. CANADA, Alberta, Calgary (*Wolley-Dod*), 2 ♂. *Exp.* 48 millim.

3342. Trichoplexia exornata. (Plate CXIII. fig. 24.)

Hadena exornata, Möschl. Wien. ent. Mon. iv. p. 364, pl. 9. f. 5 (1860); Smith, Cat. Noct. N. Am. p. 134; Staud. Cat. Lep. pal. p. 173.

♀. Head and thorax rufous slightly mixed with fuscous; palpi blackish at sides; frons with blackish lateral bars; tegulæ with slight dark medial line; tarsi blackish ringed with rufous; abdomen rufous with the dorsal crests dark. Fore wing rufous suffused with purplish brown, the medial and terminal area except at apex somewhat darker, traces of a dark streak below base of cell and of a subbasal striga from costa; antemedial line blackish, rather diffused, very slightly angled outwards below costa, then oblique to submedian fold where it is angled, then incurved; claviform absent; orbicular and reniform pale, defined by fuscous, the former small, rather elongate and with slight brown centre, the latter with its centre slightly defined by brown and its lower part tinged with fuscous; traces of a medial line, below the cell approximated to the postmedial line, which is blackish, rather diffused and defined by whitish on outer sides, slightly bent outwards below costa, then very minutely waved, excurved to vein 4, then incurved, some slight pale points beyond it on costa; subterminal line indistinct, pale, slightly angled outwards at vein 7 and excurved at middle, in discal fold angled inwards nearly to the postmedial line, the veins beyond it with slight dark streaks; cilia chequered rufous and fuscous. Hind wing pale, suffused with fuscous brown, the terminal area rather darker, the termen tinged with purplish pink; traces of a postmedial line; cilia purplish pink; the underside paler, the costal and terminal areas suffused with purplish pink, a discoidal point and curved postmedial line.

Hab. CANADA, Labrador, 1 ♀; NEWFOUNDLAND; ? U.S.A., Colorado, Glenwood Springs. *Exp.* 48 millim.

Genus **LASIPLEXIA**, nov.

Type, *L. cuprina*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and fringed with long hair in front, the 3rd moderate, porrect; frons smooth with large tuft of hair; eyes large, rounded; vertex of head with crest; thorax clothed with hair only, the pro- and metathorax with slight spreading crests; tibiæ moderately fringed with hair; abdomen with

some rough hair and one crest at base. Fore wing with the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with rather short branches, the apex serrate.

3343. Lasiplexia cuprina.

Apamea cuprina, Moore, P. Z. S. 1881, p. 345, pl. 38. f. 2; Hmpsn. Moths Ind. ii. p. 202.
Eurois chalybeata, Hmpsn. Moths Ind. ii. p. 230 (nec Wlk.).

Head and thorax deep red-brown; palpi blackish; frons with blackish lateral bars; tegulæ blackish at tips; abdomen fuscous brown with a yellowish tinge, the anal tuft more rufous. Fore wing deep red-brown suffused with fuscous, the veins with blackish streaks; subbasal line represented by slight double dark striæ from costa; antemedial line indistinctly double, oblique, incurved in cell and angled inwards on vein 1; claviform small, defined by brown; orbicular small, defined by brown, oblique elliptical; reniform defined by brown and with curved brown line in centre, its inner

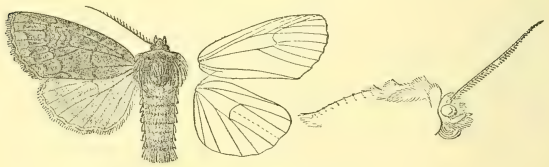


Fig. 94.—*Lasiplexia cuprina*, ♂. ½.

part brown, its outer rufous; an indistinct medial line oblique from costa to lower angle of cell, then inwardly oblique and minutely waved; postmedial line double, brown, its inner part distinct, bent outwards below costa, then dentate, excurved to vein 4, then oblique, some slight whitish points beyond it on costa; subterminal line rufous defined on inner side by dark brown forming somewhat dentate marks at middle, slightly excurved below vein 7 and at middle and angled inwards in submedian fold; a terminal series of small black lunules; cilia dark brown with a blackish line near base. Hind wing yellowish suffused with brown and with traces of a diffused subterminal band; cilia yellowish with a dark line near base; the underside with slight discoidal lunule and bisinuate postmedial line.

Hab. Sikhim (*Elwes*), 2 ♂. *Exp.* 32 millim.

Sect. II. Antennæ of male ciliated.

A. Fore wing with white or pale spots on outer edge of reniform ..... *chalybeata.*
B. Fore wing without white or pale spots on outer edge of reniform.
a. Fore wing red-brown suffused with purplish grey..... *nubila.*
b. Fore wing black-brown irrorated with silvery blue ..... *cyanea.*

3344. Lasiplexia chalybeata.

Mamestra chalybeata, Wlk. xxxii. 635 (1865); Hmpsn. Moths Ind. iv. p. 510.
Mamestra suffusa, Moore, P. Z. S. 1867, p. 52.

Head and thorax dark brown slightly mixed with greyish, the head rather more rufous; abdomen reddish brown more or less suffused with fuscous, the anal tuft more rufous. Fore wing greyish brown suffused with black-brown and irrorated with metallic blue scales especially on the veins and termen, the veins streaked with black; subbasal line represented by double black striæ from costa and cell; antemedial line double filled in with greyish, angled outwards below costa, then oblique, waved; claviform defined by black; orbicular and reniform defined by black, the former greyish with dark centre, round, the latter with its inner part dark, its outer dull rufous; a waved, dark medial line oblique from costa to below cell; postmedial line double filled in with greyish, bent outwards below costa, then minutely dentate, excurved to vein 4, then incurved, some white points beyond it on

Fig. 95.—*Lasiplexia chalybeata*, ♂. ½.

costa; subterminal line greyish strongly defined by diffused black on inner side, slightly angled outwards at veins 7, 6, 4, 3; the terminal area rather paler with series of small black lunules on termen; cilia with fine pale line at base. Hind wing yellowish suffused with brown, the terminal area rather darker; cilia ochreous with brown line through them; the underside greyish suffused with fuscous, a small discoidal spot and curved postmedial line.

Ab. 1. Fore wing with pure white spot on outer edge of reniform with white points above and below it.

Hab. Punjab, Kulu; Sikhim Tibet, Yatung (*Hobson*), 1 ♀; Sikhim (*Russell*, *Lidderdale*, *Atkinson*, *Elwes*, *Möller*), 7 ♂, 3 ♀, type and type *suffusa*. *Exp.* 50–60 millim.

*3345. Lasiplexia nubila.

Apamea nubila, Moore, P. Z. S. 1881, p. 346, pl. 38. f. 10; Hmpsn. Moths Ind. ii. p. 185, & iv. p. 509.

♂. Head and thorax red-brown suffused with purplish grey; abdomen pale brown, the dorsal crests rufous. Fore wing red-brown suffused with purplish grey; a sinuous black streak below base of cell; antemedial line double, curved, waved; claviform defined by black, kidney-shaped; orbicular and reniform large, indistinct, elliptical; postmedial line double, bent outwards below costa, then waved, excurved to vein 4, then incurved, a black streak in submedian fold from it to the subterminal line, which is pale defined on each side by brown, dentate. Hind wing pale brown; the underside with indistinct discoidal spot.

Hab. SIKHIM, type † ♂ in Coll. Staudinger. *Exp.* 40 millim.

3346. Lasiplexia cyanea, n. sp. (Plate CXIX. fig. 32.)

♀. Head and thorax very dark brown, the head rather more rufous; tarsi ringed with whitish; abdomen grey-brown. Fore wing very dark brown with a reddish tinge, irrorated with some silvery blue scales especially on medial area and termen; subbasal line represented by a semicircular silvery blue mark below costa; antemedial line indistinct, dark, defined on inner side by silvery blue, angled outwards below costa, incurved in cell, then excurved; claviform slightly defined by silvery blue at extremity; orbicular irrorated with silvery blue and defined by black, oblique elliptical; reniform indistinct, slightly irrorated with blue, defined by black and its centre also defined by black, a greyish lunule on its outer edge; traces of a curved dark medial line; postmedial line indistinct, dark, defined by silvery blue on outer side towards costa and inner margin, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line silvery blue, excurved at vein 7, slightly angled outwards at veins 4, 3 and inwards in submedian fold; a terminal series of small black lunules; cilia dark brown at base, yellowish brown at tips. Hind wing deep fuscous brown; cilia yellowish with a dark line through them; the underside yellowish tinged with brown and broadly suffused with fuscous on costal and terminal areas, a curved postmedial line.

Hab. ASSAM, Khásis, 1 ♀ type. *Exp.* 46 millim.

Genus TRIGONOPHORA.

	Type.
Trigonophora, Hübn. Verz. p. 217 (1827)	*meticulosa.*
Solenoptera, Herr.-Schäff. Eur. Schmett. ii. p. 299 (1845)	*meticulosa.*
Brotolomia, Led. Noct. Eur. pp. 35–115 (1857)	*meticulosa.*
Mesolomia, Smith, Cat. Noct. N. Am. p. 171 (1893), non descr...	*iris.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching

about to middle of frons and broadly fringed with hair in front, the 3rd short; frons smooth with large tuft of hair; eyes large, round; antennæ of male with fasciculate cilia; thorax clothed with hair only; the tegulæ produced to a dorsal ridge, the prothorax with triangular crest, the metathorax with large paired spreading crests; tibiæ moderately fringed with hair; abdomen clothed with rough hair at base, with dorsal crests on basal segments and lateral fringes of hair. Fore wing with the apex obliquely truncate, the termen and cilia typically strongly dentate, the termen excised from vein 4 to tornus veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

Sect. I. Fore wing with the termen and cilia strongly dentate and the termen strongly excised below vein 4.

A. Fore wing with the V-shaped mark between orbicular and reniform filled in with dark brown ..... *meticulosa.*

B. Fore wing with the V-shaped mark between orbicular and reniform not filled in with dark brown ..... *iris.*

3347. Trigonophora meticulosa.

Noctua meticulosa, Linn. Syst. Nat. ed. x. p. 513 (1758); Esp. Schmett. iv. p. 112, ff. 5–7; Hübn. Eur. Schmett., Noct. f. 67; Dup. Lép. Fr. vi. p. 340, pl. 94. f. 3; Donovan, Brit. Ins. iv. pl. 139; Steph. Ill. Brit. Ent., Haust. iii. p. 83; Staud. Cat. Lep. pal. p. 185.

Head and thorax ochreous white tinged with rufous; palpi pale red except at tips; sides of frons brownish red; tegulæ with fine brown lines at middle and tips; patagia with fine brown line near base and slight streak on upper edge; metathoracic crests bright rufous; pectus pale red; legs pale brown, the spurs, extremity of tibiæ and tarsi ringed with white; abdomen whitish tinged with pale red on terminal half, the crests brownish, the ventral surface pale red with fuscous sublateral points and ventral streak. Fore

Fig. 96.—*Trigonophora meticulosa*, ♂. ½.

wing with the basal area and costal area to beyond middle pale pink; the antemedial area with triangular pale red-brown patch from cell to inner margin, the medial area rufous except towards costa, the postmedial area ochreous white irrorated with pale brown towards costa and inner margin, the terminal area pale brown except at apex which is ochreous white irrorated with brown; a brown striga at base; subbasal line double, brown, from costa to vein 1, a black

point beyond it in cell; antemedial line brown defined on inner side by pale pink, bent inwards below costa, then very oblique and slightly incurved above vein 1, with another line before it from costa to submedian fold; claviform slightly defined by brown at extremity; orbicular pale pink defined at sides by whitish, oblique quadrate, its lower extremity confluent with the reniform which is represented by a narrow wedge-shaped pinkish bar; some dark striæ from medial part of costa; the outer edge of rufous area very oblique, slightly sinuous below vein 2 and almost meeting the antemedial line at inner margin; postmedial line double, fine, pale brown, angled outwards below costa, obliquely incurved to vein 5, the inner line then bent inwards to below angle of cell and oblique and dentate to inner margin at antemedial line, the outer incurved and waved, some white points beyond it on costa; subterminal line indistinct, whitish, slightly angled outwards at vein 7 where there is a black point on its inner side, then minutely waved and close to inner edge of the pale brown terminal area; the termen and cilia with blackish marks at the excision between veins 4 and 3; cilia pale rufous, blackish at tips in the excisions. Hind wing white, the veins and inner area tinged with ochreous; a pale brown postmedial line slightly angled at vein 4; a pale subterminal line, double and waved from costa to vein 4, then single and diffused; a fine brown terminal line and the cilia tipped with brown from apex to vein 4; the underside with the costal area irrorated with rufous except towards base, a brown striga on upper discocellular, a fine sinuous subterminal line angled inwards below costa with traces of another line beyond it.

Hab. Britain, Shetland Is., England, Leech Coll.; France, Sand Coll.; Denmark, Leech Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary, Zeller Coll.; Switzerland; Spain; Italy, Courmayeur (*Hampson*), Capri (*C. S. Browne*); Greece, Merlin Coll.; Algeria; Azores (*O. Grant*), 1 ♂, 5 ♀; Scandinavia; Russia; Armenia; Asia Minor, Bithynia, Pontus; Syria. *Exp.* 46–56 millim.

Larva. Meyr. Brit. Lep. p. 127; Barrett, Lep. Brit. v. p. 55, pl. 190. f. 3. Green or brown with whitish dots; dorsal line whitish, interrupted; spiracular line pale or whitish; head pale green or ochreous speckled with brown. Food-plants: *Senecio*, *Rumex*, *Viola*, &c. 7–♂ and 10–3.

3348. Trigonophora iris. (Plate CXX. fig. 1.)

Phlogophora iris, Guen. Noct. ii. p. 64 (1852); Smith, Cat. Noct. N. Am. p. 171; Staud. Cat. Lep. pal. p. 185.

Head and thorax ochreous white tinged with rufous; palpi pale red; tegulæ with fine brown lines at middle and near tips; patagia with a fine brown line near base; metathoracic crests bright rufous; pectus pale rufous; the legs ochreous mixed with brown; abdomen ochreous, the dorsal crests and ventral surface rufous. Fore wing

ochreous suffused with rufous, the antemedial area with triangular red-brown patch from cell to inner margin, the medial area red-brown except towards costa, the inner part of postmedial area pale, from costa to vein 4; subbasal line brown, double, from costa to submedian fold, a brown point beyond it in cell; antemedial line double, brown filled in with pale rufous, very oblique and minutely waved; claviform small defined by red-brown; orbicular and reniform defined by ochreous except below where they extend to well below cell and are defined by chocolate-brown with some grey-brown in their upper parts, the former elliptical, its lower extremity confluent with the latter, which is oblique elliptical with an ochreous line near its inner edge, angled outwards at lower angle of cell; postmedial line double, fine, red-brown, obsolescent towards costa, angled outwards below costa, incurved below vein 4 and very oblique to inner margin near antemedial line, some white points beyond it on costa; subterminal line whitish, angled outwards at vein 7 where there is a blackish point on its inner edge, then defined by red-brown on each side; oblique and minutely waved; a terminal chocolate-red line with a lunule at apex; cilia black-brown with a whitish line at base. Hind wing ochreous yellow, the costal area whitish; an indistinct sinuous postmedial line; a diffused red-brown subterminal band obsolescent towards costa; the termen suffused with rufous and with red terminal line; cilia white, brown at tips; the underside yellowish white, the costal and terminal areas suffused with yellow, a slight rufous discoidal lunule, sinuous postmedial line arising from near apex, and diffused subterminal line.

Hab. CANADA, Ontario, Orilla (*Bushe*), 1 ♀, Manitoba, Awemo (*Criddle*), 1 ♀; U.S.A., Northern, Middle, and Central States, Massachusetts, Beverley (*Burgess*), 1 ♂, 1 ♀, New York (*Doubleday*, *Packard*), 1 ♂, 1 ♀ type, Evans Center (*Grote*), 3 ♀. *Exp.* 46–50 millim.

SECT. II. Fore wing with the termen and cilia slightly crenulate, the termen slightly excised below vein 4.

A. Fore wing with the reniform lunulate, its outer edge excurved at middle ..... *fuscomarginata.*
B. Fore wing with the reniform oblique rectangular ..... *subpurpurea.*

3349. Trigonophora fuscomarginata. (Plate CXX. fig. 2.)

Phlogophora fuscomarginata, Leech, Trans. Ent. Soc. 1900, p. 72.

♂. Head and thorax pale pinkish; frons with slight brown line above; tegulæ with fine brown lines at middle and tips; patagia with slight obliquely curved brown line; metathorax with paired fiery red patches; coxæ and the hair on femora fiery red; abdomen ochreous, the crests tinged with red-brown, the ventral surface suffused with fiery red. Fore wing ochreous suffused with red-brown, the costal area rather darker, a triangular red-brown patch from inner margin near base to postmedial line at lower angle of

cell, the terminal area purple-brown from vein 6 to tornus; subbasal line represented by double brown striæ from middle of cell to submedian fold; a brown striga across the cell before antemedial line, which is double, oblique from subcostal nervure to submedian fold, then incurved, the outer line bent outwards above inner margin and joining the postmedial line; orbicular and reniform large with pale pinkish grey annuli defined by brown, the former oblique elliptical, open above and extending to above cell, the latter with ochreous patch in middle, its outer edge slightly angled outwards at vein 6; postmedial line red-brown, strongly bent outwards below costa, incurved to vein 5, then very obliquely incurved and slightly sinuous to above inner margin where it joins the antemedial line, some whitish points beyond it on costa; subterminal line ochreous from costa to vein 6, then obsolescent, defined on inner side by a black-brown band from vein 7 to inner margin, angled outwards at vein 7, then obliquely curved; a fine sinuous black-brown terminal line and lunule below apex; cilia black-brown, rufous towards apex, with a fine white line at base. Hind wing ochreous tinged with brown; a fine postmedial brown line oblique to vein 4 then incurved to vein 2; a diffused subterminal band obsolescent towards costa; a diffused terminal band widening to vein 2, then obsolescent and reddish to vein 1; a fine terminal brown line; cilia bright rufous, white at base; the underside ochreous, the costal area slightly tinged with pinkish and strongly with fiery red towards apex, a sinuous postmedial brown line excurved at middle, and traces of a subterminal red line from costa to discal fold.

Hab. W. China, Pu-tsu-fang, 1 ♂ type. *Exp.* 56 millim.

3350. Trigonophora subpurpurea.

Phlogophora subpurpurea, Leech, Trans. Ent. Soc. 1900, p. 71.

Head and thorax greyish ochreous tinged and irrorated with rufous; palpi crimson; tegulæ with red-brown medial line; metathoracic crests fiery red; pectus crimson; tibiæ brown, the tarsi

Fig. 97.—*Trigonophora subpurpurea*, ♂. ½.

white; abdomen rufous, the crests fiery red, the ventral surface crimson with fuscous ventral fascia except towards base. Fore wing ochreous suffused and irrorated with red-brown, the medial area chocolate-red from median nervure to inner margin on which it extends obliquely to near base; the terminal area irrorated with

grey-white except towards apex; subbasal line represented by a faint brown striga from costa with a brown point beyond it in cell; antemedial line indistinct, double, oblique from costa to median nervure, angled inwards in submedian fold, then very oblique and the outer line joining the postmedial line above inner margin; claviform a red patch; orbicular with ochreous annulus defined at sides by red-brown, elliptical; reniform an oblique bar with ochreous line on its inner edge and its outer part red; postmedial line double, brown, oblique from costa to vein 5, then bent inwards to below angle of cell and oblique to inner margin at antemedial line, the inner line defined by grey on inner side from lower angle of cell to where it joins the antemedial line; subterminal line arising at vein 7, ochreous defined on each side by red, slightly excurved to vein 3, then oblique; a fine red-brown terminal line; cilia dark brown slightly mixed with grey. Hind wing ochreous yellow; the terminal part of vein 2 streaked with brown; a faint sinuous postmedial line and diffused subterminal line from discal fold to inner margin; termen greyish with fine red terminal line; cilia ochreous at base, red-brown at tips. Underside of both wings ochreous with the costal areas suffused with fiery red leaving the costa of fore wing greyish; fore wing with two dark discoidal spots, brown postmedial line excurved to vein 5 then oblique, subterminal line from vein 7 to inner margin and the termen brown from vein 6 to tornus; hind wing with sinuous postmedial line, subterminal line from costa to discal fold, the termen brown to vein 2.

Hab. W. China, Ta-chien-lu (*Pratt*), 1 ♂ type; Punjab, Simla (*Pilcher*), 1 ♀. *Exp.* ♂ 50, ♀ 54 millim.

Genus CHUTAPHA.

	Type.
Chutapha, Moore, Lep. Atk. p. 131 (1882)	*costalis.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately scaled, the 3rd short; frons smooth; eyes large, rounded; antennæ of male typically serrate and fasciculate; head and thorax clothed with hair only, the prothorax with triangular ridge-like crest, the metathorax with paired crests; abdomen with dorsal series of crests and lateral tufts on terminal segments, male with extensible tufts of long hair from lateral stigmata. Fore wing with the apex obliquely truncate, the termen and cilia dentate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base only.

Sect. I. Antennæ of male bipectinate with short branches, the apical third ciliated.

A. Fore wing with the medial area not dark brown towards inner margin, the orbicular extending to well below cell ..... *interrupta.*

B. Fore wing with the medial area dark brown to inner margin or concolorous, the orbicular hardly extending to below cell.

a. Fore wing with the antemedial line oblique ..... *vollastoni.*

b. Fore wing with the antemedial line erect ..... *conservuloides.*

3351. Chutapha interrupta. (Plate CXX. fig. 3.)

Brotolomia interrupta, Warr. Nov. Zool. xii. p. 441 (1905).

Head and thorax ochreous suffused with rufous; palpi with the 2nd joint at extremity in front and 3rd joint dark brown; metathoracic crests tipped with deep rufous; pectus and legs bright rufous, the tibiæ and tarsi slightly ringed with whitish; abdomen ochreous suffused with rufous, the ventral surface bright rufous. Fore wing ochreous suffused with rufous, a wedge-shaped black-brown mark on inner margin before middle, the medial area deep red-brown before and between the stigmata and below the cell to submedian fold; subbasal line red-brown, slightly sinuous, from costa to submedian fold, with a red-brown point beyond it below the cell; antemedial line represented by two slight red-brown striæ from costa and a line on inner edge of the dark patch; the medial area with elongate red-brown annulus on vein 1; orbicular and reniform reddish ochreous defined at sides by red-brown, the former oblique, extending to well below cell, rounded below and confluent on median nervure with the latter which is oblique, with large red-brown lunule near outer edge which is waved; postmedial line triple, arising from below costa, the inner line slightly excurved beyond lower angle of cell, then incurved and forming the outer edge of the dark patch, the outer line oblique and slightly waved below vein 4, slightly angled inwards below vein 3 and in submedian fold; some pale points on postmedial part of costa; subterminal line ochreous defined on inner side by red-brown suffusion and slight dark brown lunules between veins 7 and 3, angled outwards at vein 7, then oblique waved; the terminal area slightly striated with red-brown; a slight waved red-brown terminal line. Hind wing ochreous yellow tinged with rufous especially on terminal area; a faint discoidal lunule; a sinuous postmedial line from vein 6 to submedian fold; a waved ochreous subterminal line defined by rufous on inner side and obsolete towards costa; a fine rufous terminal line; the underside ochreous, the costal area tinged with rufous, a dark discoidal spot, slight oblique postmedial line from costa to below vein 5 and faint diffused subterminal line.

Hab. Azores, S. Jorges (*O. Grant*), 1 ♂, 1 ♀. *Exp.* 52 millim.

*3352. Chutapha vollastoni.

Phlogophora wollastoni, Beth.-Baker, Trans. Ent. Soc. 1891, p. 208; Staud. Cat. Lep. pal. p. 185.
Brotolomia periculosa, Staud. Cat. Lep. pal. p. 185 (nec Guen.).

♂. Head and thorax bright rufous mixed with whitish; tegulæ with rufous lines at middle and tips, each slightly edged with whitish behind; tibiæ with the spurs ringed with fuscous and white; abdomen pale rufous dorsally tinged with brown except at base and with slight sublateral and ventral fuscous spots on terminal segments. Fore wing bright rufous with slight black irroration, the costa more strongly irrorated, the postmedial area somewhat paler; a faint double,

waved subbasal line from costa to submedian fold with a black point beyond it in cell; antemedial line indistinct, double, oblique, sinuous, with a faint waved less oblique line before it; orbicular and reniform large, confluent below with slight whitish annuli faintly defined by brown, the former oblique elliptical, the latter oblique and constricted at middle; a diffused oblique brown line from lower angle of cell to inner margin; postmedial line faintly defined by whitish on outer side, indistinct from costa to discal fold, then dark and more prominent, strongly bent outwards below costa, oblique to discal fold, excurved at median nervules, then oblique, sinuous,

Fig. 98.—*Chutapha vollastoni*, ♂. ½.

followed by three very indistinct oblique waved dark lines, some white points beyond it on costa; subterminal line whitish slightly defined on each side by rufous, oblique and very minutely waved; cilia dark brown with fine rufous line at base and tipped with white in the crenulations. Hind wing pale rufous suffused with dark brown except on costal area; an indistinct oblique dark medial line and faint pale rufous sinuous subterminal line; cilia rufous with pale line at base and whitish tips; the underside whitish suffused with rufous, a brown discoidal spot, postmedial line oblique below vein 6, and faint subterminal line.

♀. Fore wing tinged with purplish grey except on costal half of postmedial area, the terminal area more strongly suffused with purplish grey, the postmedial line indistinct throughout.

Ab. 1. Head, thorax, and fore wing grey irrorated with brown and without any rufous tinge, the last with the medial area dark chocolate-brown from cell to inner margin extending into the cell before and between the stigmata.

Hab. Madeira (*Wollaston*), type † in Coll. Bethune-Baker. *Exp.* 52 millim.

3353. **Chutapha conservuloides.** (Plate CXX. fig. 4.)

Euplexia conservuloides, Hmpsn. J. Bomb. Soc. xi. p. 443 (1897).

♂. Head and thorax red-brown with a purplish tinge; tegulæ with brown lines defined by whitish near base and at tips; patagia and prothoracic crest traversed by a curved brown line defined by whitish: metathoracic crests deep red-brown; tibiæ with white rings on spurs and at extremities; abdomen ochreous tinged with

rufous, the ventral surface deep red-brown. Fore wing ochreous suffused with red-brown and slightly tinged with purple; subbasal line double, minutely waved, from costa to vein 1; antemedial line double, erect, sinuous; medial area deep red-brown except towards costa; claviform represented by a black point at extremity; orbicular and reniform pale purplish defined at sides by black-brown, oblique bar-shaped, conjoined by a fascia below and forming a broad V-shaped mark; postmedial line double, strongly bent outwards below costa, slightly incurved to above vein 4, then oblique sinuous, the inner line bent inwards to lower angle of cell; the outer indistinct, some whitish points beyond it on costa; subterminal line indistinct, pale, slightly defined by brown on inner side and strongly by black-brown between veins 7 and 3, slightly angled outwards at vein 7 and incurved below vein 3; a fine sinuous brown terminal line; cilia red-brown with a fine white line at base. Hind wing ochreous white suffused with red-brown, the veins brownish with a darker streak on vein 2; indistinct sinuous postmedial and subterminal lines; a fine brown terminal line; cilia red-brown with a fine white line at base; the underside ochreous white, the costal area suffused with rufous, a curved red-brown postmedial line.

Hab. Sikhim (*Pilcher*), 1 ♂ type. *Exp.* 36 millim.

Sect. II. Antennæ of male serrate and fasciculate.

A. Fore wing without pale spot below orbicular..... *beatrix.*
B. Fore wing with pale spot below orbicular ..... *costalis.*

3354. Chutapha beatrix.

Phlogophora beatrix, Butl. A. M. N. H. (5) i. p. 193 (1878); id. Ill. Het. B. M. iii. p. 16, pl. 44. f. 12; Staud. Cat. Lep. pal. p. 185.
Phlogophora pallens, Oberth. Diag. Lep. Askold. p. 14 (1870); id. Ét. Ent. v. p. 78, pl. 3. f. 3.

Head and thorax ochreous tinged with reddish brown; palpi pale crimson-red; tegulæ with whitish line at middle and whitish tips; patagia with whitish line near base; metathoracic crests tipped

Fig. 99.—*Chutapha beatrix*, ♂. ½.

with crimson-red; pectus ochreous tinged with rufous; legs brownish; abdomen brownish ochreous, the ventral surface pale red. Fore wing ochreous suffused with olive-brown in parts, the postmedial

area paler, the antemedial area with triangular olive-brown patch from cell to inner margin, the medial area olive-brown, paler towards costa; the terminal area suffused with olive-brown except at apex; subbasal line indistinct, double, from costa to submedian fold; some pinkish in and below cell before the antemedial line, which is double, brownish, oblique, slightly bent outwards to costa, then almost straight; a blackish streak below submedian fold from before antemedial line to middle of medial area, bent upwards at extremity; orbicular pinkish defined at sides by ochreous, oblique quadrate, confluent at lower extremity with the reniform, which is oblique and angled inwards on median nervure, defined by ochreous on inner side and above and by small black marks on outer side and below; postmedial line double, arising from below costa, the inner line slight, sinuous to vein 5, then bent inwards to just beyond reniform and oblique to inner margin near antemedial line, the outer stronger, erect to vein 5, then oblique sinuous; some pale points on postmedial part of costa; subterminal line ochreous defined on each side by brown and by some dark brown on inner side between veins 6 and 4, slightly excurved at vein 7 and incurved below vein 3; a terminal series of deep chocolate-brown lunules; cilia dark brown with pink line at base. Hind wing ochreous yellow tinged with rufous especially on terminal area, the veins brownish; a slight postmedial line oblique to vein 4 where it is angled; a sinuous ochreous subterminal line defined by brown suffusion on inner side; a fine brown terminal line; cilia rufous; the underside ochreous, the costal area slightly tinged with rufous, a slight brown striga on upper discocellular, and sinuous postmedial line.

Hab. E. Siberia, Amurland, 2 ♀; Japan, Hakodaté (*Lewis, Andrews, Pryer*), 1 ♂, 5 ♀ type, Oiwake (*Pryer*), 1 ♀, Yokohama (*Pryer*), 1 ♂, 1 ♀. *Exp.* 46–52 millim.

3355. Chutapha costalis. (Plate CXX. fig. 5.)

Chutapha costalis, Moore, Lep. Atk. p. 131 (1882); Hmpsn. Moths Ind. ii. p. 221.

Head and thorax whitish grey mixed with golden rufous, the tegulæ tinged with olive-green; palpi and sides of frons dark brown; antennæ ringed black and white; pectus and legs brown mixed with grey, the tarsi ringed with white; abdomen whitish tinged with brown, the dorsal crests golden rufous. Fore wing with the apex somewhat produced, golden olive-green, the area below end of cell with slightly darker shade, a grey-white fascia below costa to the postmedial line; subbasal line double, waved, from costa to vein 1; a slight dark shade on inner area before the antemedial line which is indistinctly treble, oblique, angled outwards below costa and above inner margin; claviform small slightly defined by black; orbicular and reniform with olive centres and whitish annuli slightly defined by blackish, the former lunulate, conjoined to a semilunate pinkish-white spot below cell, the latter angled inwards on medial nervure to the spot below cell; postmedial line indistinctly treble

filled in with grey, strongly bent outwards and almost obsolete below costa, then oblique, minutely waved, interrupted between veins 4 and 3, some white points beyond it on costa; subterminal line pinkish white, defined on each side by olive-brown, slightly angled outwards at vein 7, minutely dentate to vein 4, then more strongly dentate, a fine brown terminal line; cilia with slight brown line through them. Hind wing whitish tinged with brown; an indistinct diffused subterminal brown band; a dark streak on terminal part of vein 2; a dark terminal line; cilia pale olive; the underside with the costal area irrorated with brown, a slight curved postmedial line from costa to vein 5 and indistinct diffused subterminal band.

Hab. Sikhim, 7000′ (*Atkinson*, *Pilcher*), 1 ♂, 2 ♀, type. *Exp.* 42 millim.

Sect. III. Antennæ of male ciliated.

A. Fore wing with pale spot below orbicular ..... *olivacea.*
B. Fore wing without pale spot below orbicular ..... *periculosa.*

3356. Chutapha olivacea. (Plate CXX. fig. 6.)

Euplexia olivacea, Leech, Trans. Ent. Soc. 1900, p. 84.

♂. Head and thorax grey-white mixed with rufous; palpi and sides of frons dark brown; pro- and metathoracic crests rufous; pectus and legs grey mixed with brown, the tarsi ringed with white; abdomen grey-brown, the dorsal crests and anal tufts rufous. Fore wing with the apex rounded, golden olive-green, the costal area whitish grey irrorated with dark brown to postmedial line, the medial area from cell to submedian fold tinged with dark brown; subbasal line double filled in with grey, waved, from costa to vein 1, a black spot below it on inner margin; antemedial line with grey band on its inner edge, angled outwards below costa and above inner margin and incurved in cell; claviform small, very faintly defined by blackish; orbicular and reniform with olive centres and pinkish white annuli defined by some dark scales, the former rather lunulate and conjoined to a semicircular spot below cell, the latter slightly angled inwards on median nervure to the spot below cell; postmedial line with grey band on the outer edge except between veins 4, 3, strongly bent outwards below costa, at vein 4 bent inwards to reniform, then sinuous, some white points beyond it on costa; subterminal line indistinct, pale, chiefly defined by the area beyond it being brownish grey, slightly angled outwards at vein 7 and incurved below vein 3; a fine whitish line at base of cilia. Hind wing yellowish white, the costal and terminal areas tinged with reddish brown, a fine white line at base of cilia; the underside with the costal area irrorated with brown, a slight postmedial line from costa to vein 2 and traces of a diffused subterminal line.

Hab. W. China, Pu-tsu-fang, 1 ♂. *Exp.* 46 millim.

3357. Chutapha periculosa.

Phlogophora periculosa, Guen. Noct. ii. p. 65 (1852); Smith, Cat. Noct. N. Am. p. 171.
Trigonophora v-brunneum, Grote, Check List, Noct. p. 23 (1875).

Head and thorax pale pinkish tinged with rufous; palpi bright rufous at sides; tegulæ with fine red-brown lines at middle and tips; metathorax with the crests fiery red; coxæ and femora fringed with fiery red hair; tibiæ and tarsi reddish brown; abdomen rufous, whitish at base, the crests brownish tipped with grey, the ventral surface fiery red. Fore wing ochreous suffused with rufous, the antemedial area with triangular patch of red-brown suffusion before the antemedial line, the medial area red-brown except towards costa, the terminal area suffused with red-brown except at apex; subbasal line indistinct, double, slightly waved, from costa to vein 1, a black point beyond it in cell; antemedial line double, minutely waved, somewhat oblique; orbicular pale tinged with rufous, its centre defined by brown above, oblique bar-shaped, confluent below with the reniform

Fig. 100.—*Chutapha periculosa*, ♂. ½.

which is oblique bar-shaped, defined by brown at sides, its inner part pale, its outer bright rufous; postmedial line double, brown, the inner line fine, obliquely incurved from costa to vein 5, then bent inwards to lower extremity of reniform and oblique sinuous to above inner margin where it curves inwards and joins the antemedial line, the outer line indistinct, minutely waved, oblique below vein 5; a red-brown patch on costa before the subterminal line, which is red-brown, double, minutely waved, oblique, from vein 7 to inner margin; the veins of terminal area with slight dark streaks; a fine red-brown terminal waved line and lunule below apex; cilia red-brown, blackish at tips. Hind wing ochreous suffused with purplish pink except on costal area; a slightly sinuous dark postmedial line and indistinct diffused subterminal band; a fine brown terminal line; cilia ochreous, with brownish spots from apex to vein 2; the underside ochreous yellow, the costal area tinged with rufous, a slight discoidal lunule and curved postmedial line angled inwards below costa and in discal and submedian folds.

Ab. 1. *v-brunnea*. Fore wing with the patch on medial area deep red-brown.

Hab. Newfoundland; Canada, Renfrew Co., 3 ♂, Ontario, Orilla

(*Bushe*), 1 ♀, Br. Columbia, Sicamous Junction (*Miss Ricardo*), 2 ♂, 2 ♀, Vancouver (*Hawkins*), 1 ♀, Wellington (*Taylor*), 1 ♀; U.S.A., Northern, Eastern and Central States, New York (*Doubleday*), 2 ♂ type, Center (*W. Hill*), 4 ♂, 3 ♀ type *v-brunneum*, Lewis Co. (*W. Hill*), 1 ♀, Pennsylvania, New Brighton (*Merrick*), 1 ♂, Washington Terr., 1 ♀, Colorado. *Exp.* 46–52 millim.

Larva. Head shining, light brown. Body uniform, red-brown, slightly mottled with faint oblique streaks; substigmatal band pale, badly defined; no contrasted marks, all much the colour of dead leaves. Food-plants, various.—H. G. D.

Genus **HABRYNTIS**.

Type.
Habryntis, Led. Noct. Eur. pp. 35 & 114 (1857) ..... *scita.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and fringed with long hair in front, the 3rd short; frons smooth with large tuft of hair; eyes large, round; antennæ of male somewhat laminate and minutely ciliated; thorax clothed with hair only, the tegulæ produced to a slight dorsal ridge, the prothorax with triangular crest, the metathorax with paired crests; tibiæ fringed with long hair; abdomen clothed with rough hair at base, with dorsal series of crests formed of hair only and lateral fringes of hair. Fore wing with the apex obliquely truncate, the termen and cilia dentate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from well below middle of discocellulars; 6, 7 from upper angle; 8 anatomosing with the cell near base only.

3358. Habryntis scita.

Noctua scita, Hübn. Beitr. ii. 2, p. 35, pl. 1 A (1791); id. Eur Schmett., Noct. ff. 68, 475; Dup. Lép. Fr. vi. p. 337, pl. 94. ff. 1, 2; Frr. Neue Beitr. ii. pl. 105; Staud. Cat. Lep. pal. p. 185.

Head and thorax white suffused with pale olive-green; tegulæ with slight white line near tips; patagia with white line near base; metathoracic crest white; tarsi slightly ringed with white; abdomen white faintly tinged with ochreous. Fore wing white

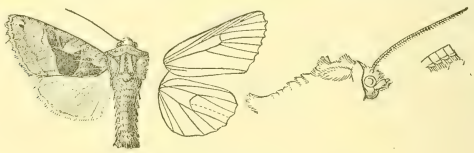


Fig. 101.—*Habryntis scita*, ♂. ½.

suffused with pale olive-green, the basal and postmedial areas paler, an olive-green patch on inner area before the antemedial line, the medial area deep olive-green except towards costa; subbasal line indistinct, olive-green, sinuous, from costa to submedian fold; antemedial line almost medial, white, oblique, straight; the

median nervures and bases of veins 4, 3 streaked with white on medial area; orbicular white, large, oblique elliptical; reniform oblique bar-shaped, defined by white on inner side and by black on outer; postmedial line double, olive-green, the outer line indistinct, angled outwards below costa, the inner line incurved to vein 5, then bent inwards to lower angle of cell, oblique and forming the outer edge of dark area to inner margin, the outer line straight to vein 5, then incurved, some white points beyond it on costa; subterminal line slight, whitish defined by olive-green on inner side, slightly angled outwards at vein 7 and with black point on its inner edge, then oblique, minutely waved, a fine olive-green terminal line; cilia olive-green, with fine white line at base and white tips with rufous points at the teeth. Hind wing greenish white tinged with ochreous except on costal area; traces of a sinuous postmedial line except towards costa; a curved diffused greenish subterminal band; a fine greenish terminal line: cilia white with a slight greenish line through them; the underside ochreous white with greenish point at upper angle of cell, sinuous postmedial line, and diffused subterminal line.

Hab. France, Sand Coll.; Germany, Zeller & Leech Colls.; Austria; Hungary; Switzerland, Frey & Leech Colls.; N. Italy; Rumelia; Armenia; Asia Minor, Lydia. *Exp.* 40–48 millim.

Larva, Kirby, Eur. Butt. & Moths, p. 245, pl. 38. f. 3; Hiffn. Raup. p. 101, pl. 28. f. 10.

Green with angular dark dorsal marks and pale dull lateral stripe. Food-plants: *Pteris aquilina* and *Ficaria ranunculoides*. 10–5.

Genus CONSERVULA.

	Type.
Conservula, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 17 (1874)	*anodonta*.
Appana, Moore, P. Z. S. 1881, p. 355	*indica*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and fringed with rather long hair in front, the 3rd short; frons smooth with large tuft of hair; eyes large, round; antennæ of male ciliated; thorax clothed with hair and hair-like scales, the prothorax without crest, the metathorax with large spreading crest; tibiæ fringed with long hair; abdomen with some rough hair at base, dorsal crests on basal segments and lateral fringes of hair. Fore wing with the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the postmedial line excurved from costa to vein 5, then oblique ..... *anodonta*.
B. Fore wing with the postmedial line oblique and nearly straight throughout.
  a. Fore wing with the antemedial line oblique throughout.
    a^1. Fore wing with the postmedial line slightly incurved below vein 4.
      a^2. Fore wing irrorated with black scales ..... *rosacea*.
      b^2. Fore wing not irrorated with black scales..... *sinensis*.

b^1. Fore wing with the postmedial line not incurved below vein 4.
a^2. Fore wing with the antemedial line not bent outwards to inner margin ..... *indica.*
b^2. Fore wing with the antemedial line bent outwards to inner margin ..... *v-brunnea.*
b. Fore wing with the antemedial line oblique from costa to submedian fold, then erect.
a^1. Fore wing with the antemedial line not waved ..... *minor.*
b^1. Fore wing with the antemedial line minutely waved ..... *cinisigna.*

3359. Conservula anodonta.

Phlogophora anodonta, Guen. Noct. ii. p. 63, pl. vii. f. 8 (1852); Smith, Cat. Noct. N. Am. p. 170.

Head and thorax pinkish rufous; palpi fiery red; frons chocolate-brown at sides; tegulæ with chocolate-brown line near tips, the patagia and thorax with chocolate-brown line in front; metathoracic crests fiery red; coxæ clothed with fiery red hair; abdomen ochreous tinged with red-brown and with rufous towards extremity, the ventral surface fiery red. Fore wing ochreous suffused with pink and slightly irrorated with brown, the veins of terminal area

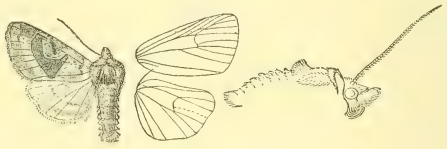


Fig. 102.—*Conservula anodonta*, ♂. ½.

streaked with black, subbasal line brown, straight, from costa to vein 1, a black point beyond it in cell; antemedial line whitish, very oblique, from subcostal nervure to above inner margin where it meets the postmedial line; medial area deep chocolate-red except on costal area; orbicular and reniform pinkish with white annuli defined by black-brown, the former oblique elliptical, the latter oblique bar-shaped, angled inwards on median nervure and confluent with the former; postmedial line dark brown defined by whitish on outer side, bent outwards below costa, excurved to vein 5, then oblique and meeting the antemedial line above inner margin; three small white spots with brown streaks between them beyond it on costa; subterminal line indistinct, pale, defined by brown on inner side, excurved below vein 7, then sinuous; terminal area suffused with red-brown except at apex; a fine black-brown terminal line; cilia rufous. Hind wing ochreous tinged with pinkish especially on terminal area and with some dark brown irroration; curved diffused brown postmedial and subterminal lines; a fine black-brown terminal line; cilia pinkish, whitish towards

tornus; the underside whitish suffused with pink, a small discoida spot and diffused sinuous crimson postmedial line.

Hab. CANADA, Ontario, Orilla (*Bushe*), 1 ♀; U.S.A., Maine, Vermont, New-York (*Doubleday*), 2 ♂ type. *Exp.* 34 millim.

3360. Conservula rosacea.

Appana rosacea, Saalm. Lep. Madag. p. 311, f. 248 (1891).

♀. Head and base of tegulæ rufous mixed with white; thorax red-brown mixed with white; antennæ brown except at base; pectus and legs rufous, the tarsi brown slightly ringed with white; abdomen rufous, whitish at base, the crests tipped with brownish. Fore wing pale rufous irrorated with black, some violaceous white before the antemedial and beyond the postmedial lines except towards costa and on terminal area; a slight brownish subbasal line from costa to vein 1; antemedial line ochreous white, very oblique, straight, from costa to vein 1 where it joins the postmedial line; orbicular and reniform violaceous white irrorated with black and defined by white at sides, confluent below and forming a V-shaped mark extending to vein 2; postmedial line ochreous white slightly defined by brown on inner side, bent outwards below costa, then very oblique and joining the antemedial line at vein 1; some white points beyond it on costa; subterminal line white defined on inner side by olive-brown, oblique, almost straight; cilia rufous. Hind wing white tinged with purplish pink especially on terminal area, the veins streaked with dark brown; a fine brown terminal line; cilia pale rufous; the underside white, the costal and terminal areas suffused with rufous, the veins irrorated with black scales, small blackish spots at the angle of cell.

Hab. MADAGASCAR, Betsileo (*Cowan*), 1 ♀. *Exp.* 30 millim.

3361. Conservula sinensis, n. sp. (Plate CXX. fig. 7.)

Appana indica, Leech, Trans. Ent. Soc. 1900, p. 109, part. (nec Moore).

Head and thorax bright rufous mixed with some white; antennæ white at base; tegulæ tipped with white; patagia with oblique white medial line and whitish tips; abdomen pale rufous. Fore wing whitish suffused and irrorated with bright rufous, the costal area rufous, the veins of terminal area streaked with blackish; subbasal line represented by double oblique rufous striæ from median nervure filled in with whitish; a wedge-shaped rufous mark on inner margin before the antemedial line, which is double, rufous filled in with white, very oblique, from below costa to inner margin; medial line deep rufous except towards costa; orbicular and reniform large, pinkish with white annuli defined by red-brown, open above, the former obliquely rounded, the latter oblique bar-shaped, extending to well below the cell and confluent with the former on median nervure; postmedial line double, rufous filled in

with whitish, slightly angled outwards below costa, then very oblique and almost straight to inner margin near antemedial line, defined by whitish on outer side; subterminal line white defined by deep rufous on inner side, oblique, straight; a fine red-brown terminal line; cilia bright rufous with fine white line at base. Hind wing white, the veins rufous, the inner margin and termen tinged with rufous; cilia rufous, whitish towards tornus; the underside with the costal area tinged with rufous, rufous points at angles of cell and slight postmedial and subterminal lines from costa to vein 6.

Hab. W. China, Chang-yang (*Pratt*), 1 ♀, Chia-kou-ho (*Pratt*), 1 ♂, 2 ♀ type, Pu-tsu-fang, 2 ♂, 1 ♀. *Exp.* 38–40 millim.

3362. Conservula indica. (Plate CXX. fig. 8.)

Phlogophora indica, Moore, P. Z. S. 1867, p. 57; Hmpsn. Moths Ind. ii. p. 246.

Head and thorax ochreous suffused with rufous; tegulæ tipped with whitish; patagia with whitish line near base and diffused dark line near tips; pectus, legs, and abdomen pale rufous. Fore wing whitish suffused with rufous, the medial area deep rufous except towards costa, the postmedial area whiter; subbasal line slight, double, inwardly oblique, from costa to vein 1, with patch of black scales beyond it below the cell; antemedial line double filled in with whitish, bent inwards below costa, then very oblique and almost straight; orbicular and reniform whitish slightly tinged with rufous and defined by white at sides, both oblique quadrate, confluent below, extending to well below cell and forming a broad V-shaped mark; postmedial line double filled in with white, bent outwards below costa, then very oblique and slightly sinuous; subterminal line white defined by red-brown suffusion on inner side, slightly incurved below vein 3; cilia bright rufous with yellowish white line at base. Hind wing white tinged with rufous especially on inner area; an indistinct, somewhat diffused reddish-brown subterminal line; a fine red-brown terminal line; cilia yellowish white at base, rufous at tips; the underside with the costal area suffused with rufous and with slight dark marks at angles of cell.

Hab. W. China, Chang-yang (*Pratt*), 4 ♂, 1 ♀; Punjab, Kulu (*G. Young*), 1 ♀, Dalhousie, 1 ♂; Sikhim (*Lidderdale, Dudgeon*), 1 ♂, 1 ♀. *Exp.* 36–40 millim.

3363. Conservula v-brunnea.

Charidea v-brunneum, Guen. Noct. ii. p. 62 (1852); Hmpsn. Moths Ind. ii p. 247.
Appana cingalesa, Moore, Lep. Ceyl. iii. p. 548, pl. 214. f. 6 (1887).

Head and thorax rufous mixed with whitish; legs brown, the tarsi ringed with white; abdomen bright rufous, pale at base.

Fore wing whitish suffused with rufous, the medial area deep rufous except towards costa, the postmedial area paler; subbasal line indistinct, double, from costa to vein 1, with slight fuscous mark on its outer edge below cell; antemedial line indistinct, double filled in with whitish, oblique and slightly incurved, from subcostal nervure to inner margin; orbicular and reniform white slightly tinged with rufous and brown, defined by white at sides and below, both oblique quadrate, confluent below, extending to below cell and forming a broad V-shaped mark; postmedial line double filled in with white, bent outwards below costa, then very oblique and almost straight; an indistinct oblique brownish subterminal line; cilia bright rufous with yellowish white line at base. Hind wing white, the veins, inner margin, and termen tinged with rufous; cilia rufous with yellow line at base from apex to vein 2, then white; the underside with the costal area suffused with bright rufous, slight rufous discoidal spots and a somewhat diffused postmedial line from costa to vein 3.

Hab. MADRAS, Nilgiris (*Hampson*), 2 ♂, 2 ♀, Pondicherry; CEYLON, 1 ♀ type *cingalesa*. *Exp.* 38 millim.

Larva. Yellow-green irrorated with yellow; each somite with an oblique yellow line defined by dark green on upper side; a broken dorsal line and lateral line pale yellow; ventral pro-legs pale yellowish green. Food-plant, bracken in the leaves of which it spins a slight cocoon. (*W. H. Campbell.*)

3364. Conservula minor.

Conservula minor, Holl. Pr. U.S. Nat. Mus. xviii. p. 253, pl. 8. f. 1 (1896).

♀. Head and thorax rufous mixed with purplish pink and some white; tegulæ with white lines at middle and tips; patagia with oblique white line across them and whitish edge above towards tips; pectus whitish; legs rufous; abdomen purplish rufous, white at sides at base. Fore wing rufous with some pinkish on antemedial, postmedial, and terminal areas; subbasal line rufous defined by pale pink on outer side, inwardly oblique from costa to submedian fold; an oblique rufous line defined by pink on outer side from submedian fold to inner margin before the antemedial line, which is double, rufous filled in with pink, very oblique from costa to submedian fold, then erect; orbicular and reniform rufous with pale pink annuli defined at sides by rufous, oblique bar-shaped; connected below and forming a V-shaped mark extending to vein 2; postmedial line double, rufous filled in with pale pink, arising from costa towards apex and very oblique below vein 4; subterminal line pale pink defined by rufous on inner sides, oblique, straight. Hind wing yellowish white, the veins and termen tinged with rufous; cilia rufous; the underside with rufous points at angle of cell and indistinct curved postmedial line.

Hab. E. AFRICA; CAPE COLONY, 1 ♀. *Exp.* 36 millim.

3365. Conservula cinisigna.

Conservula cinisigna, de Joan. Ann. Soc. Ent. Fr. 1906, p. 170, pl. 9. f. 2.

Head and tegulæ bright rufous; thorax ochreous suffused with red-brown; patagia with oblique dark line near tips; metathoracic crests bright rufous with dark tips; pectus bright rufous; legs brown; abdomen pale rufous, the ventral surface suffused with red-brown. Fore wing pinkish rufous with slight dark irroration, the veins with dark streaks; subbasal line double, dark, waved, from costa to vein 1, a dark striga beyond it in cell; an oblique diffused band from median nervure before antemedial line to inner margin, fuscous above and rufous towards inner margin; antemedial line blackish, double, waved, somewhat oblique; claviform faintly defined by rufous at extremity; orbicular and reniform whitish tinged with rufous and with slight dark irroration defined at sides by whitish and brown, both oblique quadrate, confluent below, extending to below cell and forming a broad V-shaped mark, the part below the cell fuscous grey defined below by blackish; postmedial line double, angled outwards below costa, then very oblique and slightly sinuous, some minute white points beyond it on costa; subterminal line very indistinct, pale, slightly defined by rufous on inner side, very slightly excurved below vein 7, then oblique; cilia with a slight pale line at base. Hind wing white, the veins, inner margin, and termen tinged with rufous; cilia rufous with yellowish line at base from apex to vein 2, then whitish; the underside with the costal area suffused with rufous, slight rufous spots at angles of cell, traces of a postmedial line from costa to vein 6, and traces of a subterminal line.

Hab. Transvaal (*Cholmley*), 1 ♂; Mauritius, Curepipe (*Tulloch*), 1 ♂, 1 ♀. *Exp.* 40 millim.

Genus **CALPIFORMIS**, nov.

Type, *C. craushayi*.

Proboscis fully developed; palpi obliquely porrect, extending to well beyond frons, the 2nd joint fringed with long hair below, the 3rd short; frons smooth, eyes large, round; antennæ of male biserrate; thorax clothed with hair and scales mixed, the pro- and metathorax with divided crests; tibiæ fringed with long hair; abdomen with large dorsal crest at base only. Fore wing with the costa somewhat excised beyond middle, the apex rounded, the termen obliquely curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3366. Calpiformis craushayi.

Conservula craushayi, Hmpsn. Ann. S. Afr. Mus. iii. p. 427 (1905).

♂. Head and thorax rufous mixed with some white; abdomen whitish tinged with rufous and with slight brown segmental lines.

Fore wing whitish suffused with rufous especially on costa to beyond middle, on basal area in and below cell and on inner margin, before the postmedial line except towards costa and beyond it from vein 3 to inner margin; subbasal line red-brown, waved, from costa to vein 1; antemedial line double filled in with whitish, angled outwards below costa, incurved in cell, then oblique, waved; claviform a slight red-brown mark; orbicular white defined by red-brown, round; reniform slightly and incompletely defined by red-brown with fuscous mark at lower angle of cell, somewhat

Fig. 103.—*Calpiformis crawshayi*, ♂. ½.

constricted at middle and angled inwards on median nervure; a faint oblique line from lower angle of cell to inner margin; postmedial line double filled in with whitish, strongly bent outwards below costa, then very oblique and slightly incurved below vein 3, some whitish points beyond it on costa, its angle joined by a red-brown bar from costa; a faint slightly curved whitish subterminal line; a red-brown terminal line; cilia white. Hind wing whitish irrorated with red-brown except on basal inner area; a rather diffused red-brown postmedial line excurved below costa, then oblique; a terminal series of brown striæ; the underside white irrorated with red-brown, a dark discoidal spot, the postmedial line more prominent.

Hab. Basutoland, Mokalishoek (*Crawshay*), 2 ♂ type. *Exp.* 26–30 millim.

Genus COBALIODES.

Type.

Cobalos, Smith, J. N.Y. Ent. Soc. vii. p. 223 (1899), nec *Cobalus*, Hübn. Lep. 1827 ..... *angelicus.*

Cobaliodes, Dyar, Cat. Lep. N. Am. p. 168 (1902) ..... *angelicus.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair in front, the 3rd rather long and porrect; frons smooth; eyes large, rounded; antennæ of male bipectinate, with long branches, the apical part simple; head and thorax clothed with hair and hair-like scales; the prothorax without distinct crest, the metathorax with spreading crest; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only and lateral fringes of hair towards extremity. Fore wing with the apex rounded, the termen crenulate and rather excised towards tornus; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from well below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the orbicular and reniform confluent below.
  a. Fore wing with the orbicular and reniform whitish ..... *accurata*.
  b. Fore wing with the orbicular and reniform brown with pale annuli, the latter sometimes with white patch on it . *dubiosa*.
B. Fore wing with the orbicular and reniform not confluent.
  a. Fore wing without pale streak on vein 3 from postmedial line to termen..... *angelica*.
  b. Fore wing with pale streak on vein 3 from postmedial line to termen..... *franciscana*.

3367. Cobaliodes accurata. (Plate CXX. fig. 9.)

Plusia accurata, H. Edw. Papilio, ii. p. 127 (1882); Smith, Cat. Noct. N. Am. p. 257.

Head, thorax, and abdomen white mixed with rufous; tegulæ with diffused rufous line before the tips which are white. Fore wing whitish suffused and irrorated with rufous; a faint rufous subbasal line from costa to submedian fold with rufous suffusion before it; antemedial line indistinct, double filled in with whitish, sinuous and somewhat oblique; orbicular and reniform whitish, the former with its centre slightly irrorated with rufous, oblique quadrate and connected with costa by a whitish patch, the latter with its centre strongly irrorated with brown, oblique, curved inwards on median nervure and confluent with the former, a deep rufous rounded spot between them in cell; traces of a diffused oblique line from lower angle of cell to inner margin; postmedial line red-brown defined by white on outer side, bent outwards below costa and incurved below vein 5; subterminal line white defined by rufous suffusion on inner side, obsolescent between veins 6 and 3, very slightly excurved below vein 7, then incurved; a fine red-brown terminal line; cilia white mixed with rufous at tips. Hind wing white faintly tinged with rufous; cilia pure white.

Hab. U.S.A., Washington, Arizona, Huachuca Mts. (*Oslar*), 3 ♂, 1 ♀. *Exp.* 34–38 millim.

3368. Cobaliodes dubiosa. (Plate CXX. fig. 10.)

Nyssocnemis dubiosa, Beth.-Baker, Trans. Ent. Soc. 1891, p. 209; Staud. Cat. Lep. pal. p. 185.

♂. Head and thorax red-brown, the scales tipped with ochreous; abdomen paler. Fore wing pale reddish-brown to purplish brown with some dark irroration, the medial area blackish brown except on costal area; a double waved subbasal line from costa to submedian fold with black point beyond it in cell; a treble oblique waved antemedial line; claviform small, very obscurely defined by black; orbicular and reniform large, pale rufous with dark-defined centres, or purplish brown, the reniform with large ochreous-white patch on it, the orbicular expanding into a lobe below median nervure where it is connected with the reniform, which is angled inwards on median nervure; the postmedial line treble, waved, bent outwards below costa, incurved at discal fold and below vein 4, some pale points

beyond it on costa; subterminal line pale, dentate, defined on each side by fuscous, with two small dentate black spots on its inner edge below costa; a crenulate terminal line. Hind wing fuscous brown; the cilia ochreous and rufous; the underside greyish with blackish discoidal lunule and curved postmedial line.

Hab. Madeira (*Wollaston*), 1 ♂. *Exp.* 42 millim. Type † ♂ in Coll. Bethune-Baker.

3369. Cobaliodes angelica.

Cobalos angelicus, Smith, J. N.Y. Ent. Soc. vii. p. 223 (1899); Dyar, Cat. Lep. N. Am. p. 168.

♂. Head and thorax whitish mixed with brown; palpi with the 2nd joint blackish at sides; frons with lateral black bars; tarsi fuscous ringed with white; abdomen whitish tinged with rufous. Fore wing whitish strongly suffused and irrorated with rufous especially on medial area; subbasal line represented by a slight striga from costa; a slight dark streak below base of cell; a yellowish tinge in submedian interspace before the antemedial line, which is brown defined on inner side by white from cell to inner margin, oblique from costa to submedian fold, then inwardly oblique and angled inwards on vein 1; claviform small, defined by red-brown and with diffused red-brown streak from it to postmedial line; orbicular and reniform with whitish annuli defined by brown, the former oblique elliptical, the latter with straight inner edge and

Fig. 104.—*Cobaliodes angelica*, ♂. ½.

ill-defined on outer side; postmedial line defined by white on outer side, strongly from vein 3 to inner margin, bent outwards below costa, excurved to vein 3, then strongly incurved and slightly angled outwards on vein 1; the postmedial area suffused with white except towards costa and with prominent white patch in submedian interspace; subterminal line hardly defined from costa to vein 5, then whitish defined by rufous on inner side, forming dentate marks at middle, dentate at veins 4, 3, then incurved; a terminal series of small black lunules; cilia yellowish white mixed with brown. Hind wing yellowish white nearly uniformly suffused with red-brown; cilia yellowish white with a brown line through them; the underside white irrorated with red-brown, a discoidal spot, curved postmedial line, and traces of diffused subterminal band.

Hab. U.S.A., California, Sta. Barbara (*D'Urban*), 1 ♂, Los Angeles. *Exp.* 34 millim.

*3370. Cobaliodes franciscana. (Plate CXX. fig. 11.)

Cobalos franciscanus, Smith, J. N.Y. Ent. Soc. vii. p. 224 (1899); Dyar, Cat. Lep. N. Am. p. 168.

♂. Head and thorax fawn-brown; abdomen somewhat paler. Fore wing fawn-brown, the medial area rather darker; subbasal line obsolete; antemedial line very indistinct, slightly excurved and very slightly angled outwards in submedian fold; claviform and orbicular almost obsolete; reniform traceable, tinged with fuscous and with faint dark outline; postmedial line defined by white on outer side below vein 3, double at costa, bent outwards below costa, then minutely dentate, excurved to vein 4, then incurved; postmedial area paler except towards costa, a pale streak on vein 3 from postmedial line to near termen; subterminal line slight, pale, defined on inner side by red-brown, slightly angled outwards at vein 7 and excurved at middle; a terminal series of brown lunules; cilia with a fine pale line at base. Hind wing fuscous brown; a fine dark terminal line; cilia pale; the underside reddish grey with dark irroration, a dark discoidal spot.

Hab. U.S.A., California, San Francisco Co. *Exp.* 30 millim. This species is unknown to me, figured from a drawing from type in U.S. Nat. Mus.

Genus SYRRUSIS, nov.

Type, *S. notabilis*.

Proboscis fully developed; palpi upturned, the 2nd joint hardly reaching to middle of frons and broadly scaled, the 3rd moderate; frons smooth; eyes large, round; antennæ of male very minutely serrate and fasciculate; thorax very thickly clothed entirely with scales, the prothorax with spreading crest, the metathorax with very large spreading crest; tibiæ thickly clothed with scales, the tarsi with tufts of scales on the joints; abdomen thickly clothed with long hair but without crests. Fore wing narrow, the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3371. Syrrusis notabilis.

Panolis notabilis, Butl. A. M. N. H. (5) iv. p. 243 (1879).

♂. Head orange with black-brown bands on frons and vertex of head; palpi black, the extremities of 2nd and 3rd joints orange; thorax dark brown with a leaden grey gloss; tegulæ orange at base with black band near base and slightly tipped with orange; patagia edged with rufous above; some fiery red before the metathoracic crest; pectus and legs black-brown, the tarsi ringed with orange; abdomen yellow suffused with crimson. Fore wing with the basal area black-brown suffused with leaden grey, some orange on base of inner margin; subbasal line black defined on each side by orange, waved, from costa to submedian fold; antemedial line orange,

oblique, incurved from below costa to vein 1, then waved, defined by a narrow black-brown band on outer side to vein 1, then by a line; the medial area pale pink suffused with yellowish towards costa and with crimson towards postmedial line; a whitish line from costa before the postmedial line, defined by black on outer side from below costa to discal fold, excurved to vein 6, incurved at discal fold, then downcurved to above middle of vein 1 and upwards to below costa

Fig. 105.—*Syrrusis notabilis*, ♂. ½.

on outer edge of the dark basal area, a pale flesh-coloured patch above it below the cell conjoined to the narrow lunulate flesh-coloured reniform with its extremities much produced; a small triangular black medial spot on subcostal nervure with some reddish above it on costa; some yellow and crimson beyond the cell defining the inner side of the whitish line to vein 2; postmedial line dark red-brown, minutely waved, strongly excurved to vein 4, then oblique, two similar but paler and finer lines beyond it, the outer expanding into a dark wedge-shaped mark from costa with some yellow points on costa; an orange-yellow line just before termen; cilia deep chestnut-red. Hind wing yellowish white suffused with orange; cilia orange at base, pale at tips. Underside of fore wing pale with the costal half suffused with red leaving some yellow on costa, a slight reddish discoidal lunule and curved postmedial line except on inner area; hind wing yellowish white, the costa irrorated with red, a red discoidal point and traces of a curved postmedial line.

Hab. Madagascar, Antananarivo (*Kingdon*), 2 ♂ type. *Exp.* 40 millim.

Genus **DIPAROPSIS**.

	Type.
Diparopsis, Hmpsn. Ann. S. Afr. Mus. ii. p. 294 (1902).....	*castanea*.

Proboscis aborted, small; palpi upturned, slender, the 2nd joint reaching to vertex of head and slightly fringed with hair in front, the 3rd long, porrect; frons with flattened corneous plate below with rounded outer edge and flattened plate at middle rather pointed at extremity and keeled below; eyes large, round; antennæ of male bipectinate with moderate branches to apex, of female with short branches; thorax clothed chiefly with scales, the patagia very roughly scaled, the metathorax with spreading crest; tibia moderately fringed with hair; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell to near middle.

3372. Diparopsis castanea.

Diparopsis castanea, Hmpsn. Ann. S. Afr. Mus. ii. p. 294 (1902).

♂. Head and thorax purplish pink mixed with whitish and some fuscous; antennæ ochreous white, pectus ochreous white, purplish pink in front; abdomen ochreous white. Fore wing purplish pink mixed with whitish, the costa irrorated with olive scales; antemedial line whitish, oblique from costa to submedian fold, then erect, a dark brown band before it from costa to median nervure and crossed by a wedge-shaped olive patch in submedian interspace; an indistinct fine brownish medial line, oblique from costa to upper angle of cell, then inwardly oblique; a whitish postmedial line, excurved from costa to vein 4, then oblique, a similar subterminal line less incurved

Fig. 106.—*Diparopsis castanea*, ♂. ¾.

to costa, with blackish suffusion between them from vein 3 to inner margin; cilia pale olive mixed with fuscous. Hind wing ochreous tinged with pinkish on terminal area; cilia yellowish white; the underside yellowish white, the costal and terminal area to vein 2 irrorated with rufous.

♀. Fore wing pinker and less purple, the costal area not irrorated with olive, no band before costal half of antemedial line and the patch below the cell paler, the area between postmedial and subterminal lines on inner area and the cilia pale olive.

Hab. Uganda (*H. H. King*), 1 ♀; Lorenzo Marquez, Beira (*Johnson*), 1 ♂, 1 ♀, Delagoa Bay (*Mrs. Monteiro*), type † ♀ in Coll. Druce. *Exp.* 30 millim.

Larva. Destructive to cotton.

Genus **OROPLEXIA**, nov.

Type, *O. decorata.*

Proboscis fully developed; palpi upturned, the second joint reaching about to vertex of head and fringed with long hair in front, the 3rd moderate; frons smooth; eyes large, rounded; antennæ of male ciliated; thorax clothed with long hair mixed with a few hair-like scales and without distinct crests; pectus clothed with long hair; tibiæ moderately fringed with hair; abdomen with some rough hair at base and lateral fringes of hair but without crests. Fore wing with the apex rectangular, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the reniform angled inwards on median nervure to or to below the orbicular, the postmedial line not filled in with whitish ..... *decorata.*
B. Fore wing with the reniform not angled inwards on median nervure to or to below orbicular, the postmedial line filled in with whitish
a. Fore wing with the postmedial line bent inwards along inner margin to the antemedial line ..... *retrahens.*
b. Fore wing with the postmedial line not bent inwards along inner margin to the antemedial line.
a^1. Fore wing with the antemedial line bent inwards to inner margin..... *luteifrons.*
b^1. Fore wing with the antemedial line not bent inwards to inner margin.
a^2. Fore wing with the postmedial line oblique below vein 4.
a^3. Fore wing with the orbicular V-shaped..... *separata.*
b^3. Fore wing with the orbicular round..... *tripartita.*
b^2. Fore wing with the postmedial line incurved below vein 4 ..... *albiflexura.*

3373. Oroplexia decorata.

Mamestra decorata, Moore, Lep. Atk. p. 111, pl. 4. f. 8 (1882); Hmpsn. Moths Ind. ii. p. 227.

Head and thorax deep red-brown with a few white scales mixed; antennæ ochreous white; femora fringed with fiery red hairs; abdomen yellowish tinged with brown, paler at base, the lateral fringes and anal tuft fiery red. Fore wing deep brown irrorated with silvery blue scales especially on the veins and terminal area; the medial area rather darker except towards costa below which there is a rufous streak, the inner margin with fiery red streak except towards base; subbasal line black slightly defined by red on outer side, from costa to submedian fold; antemedial line defined

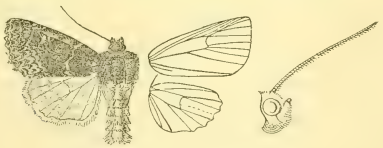


Fig. 107.—*Oroplexia decorata*, ♂. ½.

by red on inner side, oblique and slightly sinuous from costa to above inner margin where it is angled outwards, a diffused blackish patch before it on inner area; claviform absent; orbicular and reniform with rufous centres and slight greyish annuli defined by black, the former oblique elliptical, open above, the latter open above, constricted at middle and angled acutely inwards on median nervure; postmedial line defined by red on outer side, bent outwards below costa, oblique to vein 5, then inwardly oblique and minutely waved, some pale points beyond it on costa, and black streaks on the veins;

subterminal line indistinct, greyish defined by a black line on inner side, rather diffused and waved towards costa, then dentate; a terminal series of dentate black marks; cilia rufous with a brown line through them. Hind wing yellowish white, the terminal half suffused with reddish brown; a faint discoidal lunule, sinuous postmedial line and fine waved terminal line; cilia pale rufous; the underside yellowish, the costal and terminal areas irrorated with brown, a black discoidal lunule and indistinct curved diffused postmedial line.

Hab. Sikhim Tibet, Yatung (*Hobson*), 2 ♂, 1 ♀; Sikhim (*Elwes*), 5 ♂, 4 ♀. *Exp.* 40–42 millim.

3374. Oroplexia retrahens. (Plate CXX. fig. 12.)

Hadena retrahens, Wlk. xi. 757 (1857); Hmpsn. Ill. Het. B. M. ix. p. 95, pl. 162. f. 6; id. Moths Ind. ii. p. 227.

Head and thorax reddish brown tinged with greyish; palpi blackish at sides; frons yellowish with black lateral bars; tegulæ with black line near tips; tarsi fuscous with yellowish rings; abdomen yellowish suffused with brown. Fore wing grey-brown slightly irrorated with black and tinged with yellowish below the cell, a pale yellow streak on inner margin except towards base; subbasal line represented by double black striæ from costa and cell; a diffused black patch on inner area before the antemedial line, which is double filled in with yellowish, angled outwards below costa, then nearly straight oblique; claviform dark brown defined by black, large and extending to cell; orbicular and reniform yellow-brown with yellowish annuli defined by black, the former round, the latter with its centre defined by brown, its inner edge straight and with diffused black before and beyond it; postmedial line double, brown filled in with yellow and defined by yellow on outer side, oblique from costa to vein 6, then inwardly oblique and bent round above inner margin to antemedial line, some yellowish points beyond it on costa; a diffused black bar from costa before the subterminal line which is represented by a series of greyish striæ defined on inner side by dentate black marks and with slight black spots on outer side, angled outwards at vein 7 and very slightly excurved at middle; the apex greyish; a terminal series of small black lunules; cilia grey-brown with waved black line through them. Hind wing yellowish suffused with brown; a curved brown postmedial line; cilia yellowish with a slight brown line through them; the underside whitish, the costal and terminal areas suffused and irrorated with brown; a rather diffused curved postmedial line.

Hab. Kashmir, Goorais Valley (*Leech*), 1 ♀; Sikhim; Assam (*Badgley*), 1 ♂, Khásis, 1 ♀; Ceylon? loc. err., 1 ♀ type, *Exp.* 40 millim.

3375. Oroplexia luteifrons. (Plate CXX. fig. 13.)

Dianthœcia luteifrons, Wlk. xi. 751 (1857); Hmpsn. Moths Ind. ii. p. 227.

Head and tegulæ yellowish slightly tinged with brown; thorax dark brown mixed with whitish; palpi brownish at sides; frons with lateral black bars; tarsi ringed with yellowish; abdomen yellow suffused with brown. Fore wing yellow suffused with dark brown, the postmedial area except towards costa and the terminal area greyish, the veins with slight pale streaks, whitish between lower angle of cell and postmedial line, a whitish streak on inner margin except towards base; subbasal line represented by double black points below costa and cell with white between them; antemedial line represented by a black spot on costa, then retracted, double, black filled in with pure white, obliquely excurved and retracted to inner margin; claviform defined by black, large and extending to median nervure; orbicular with slight white annulus defined by black at sides only, rounded; reniform white defined by black, its centre defined by brown, its inner edge straight; postmedial line double filled in with white, bent outwards below costa, excurved and minutely waved to vein 4, then very oblique and sinuous, some white points beyond it on costa; subterminal line with diffused black bar before it at costa, then represented by a series of white striæ defined on inner side by small blackish dentate marks, angled outwards at vein 7 and slightly excurved at middle; a terminal series of small black lunules; cilia brown with yellowish line at base. Hind wing yellowish suffused with brown; cilia yellow at base, brown at tips; the underside greyish irrorated with brown, a slight discoidal lunule, indistinct diffused postmedial line, and traces of subterminal line.

Hab. Kashmir, Kokser (*McArthur*), 5 ♂; Punjab (*Buckley*), 1 ♂ type, Kumaon, Ralam Valley (*Duthie*), 1 ♂. *Exp.* 32–36 millim.

3376. Oroplexia separata. (Plate CXX. fig. 14.)

Neuria separata, Moore, Lep. Atk. p. 107 (1882); Hmpsn. Moths Ind. ii. p. 228.

♂. Head and thorax clothed with yellow-brown hair mixed with grey; tarsi with slight pale rings; abdomen grey-brown. Fore wing greyish ochreous suffused with brown and irrorated with fuscous; subbasal line double, black filled in with whitish, angled outwards below costa and ending at vein 1; antemedial line black defined by whitish on outer side, angled outwards below costa, incurved in cell, then oblique sinuous; claviform moderate, defined by black; orbicular and reniform with white annuli defined by black, the former oblique V-shaped, open above, the latter with yellowish centre defined by blackish, angled inwards on median nervure; an indistinct blackish medial line, oblique from costa to median nervure, then waved; postmedial line double, black filled

in with white, bent outwards below costa, then minutely waved, excurved to vein 4, then oblique, some white points beyond it on costa and the veins slightly streaked with whitish; subterminal line white defined on inner side by blackish patches in the interspaces, excurved below vein 7 and at middle; a terminal series of small black lunules: cilia ochreous and black with white line at base. Hind wing whitish tinged with yellow-brown, an indistinct diffused subterminal line with the area beyond it whiter; a fine dark terminal line; cilia ochreous; the underside whitish, the costal area irrorated with brown, a small discoidal spot, rather diffused postmedial line, and diffused subterminal line.

Hab. Sikhim, 1 ♂ type. *Exp.* 42 millim.

3377. Oroplexia tripartita. (Plate CXX. fig. 15.)

Apamea tripartita, Leech, Trans. Ent. Soc. 1900, p. 62.

♀. Head greyish slightly mixed with brown; sides of palpi and frons brown; thorax dark brown, the tegulæ tipped with white; tarsi with pale rings; abdomen greyish mixed with dark brown. Fore wing greyish suffused and irrorated with dark brown, the medial area darker; subbasal line indistinctly double filled in with whitish, oblique, from costa to vein 1; antemedial line double, black filled in with whitish, oblique, slightly angled outwards below costa and inwards on vein 1; claviform blackish defined by black, large; orbicular and reniform whitish defined by black, the former small, round, the latter with its inner part brownish and incompletely defined; postmedial line whitish, defined on inner side by small dentate black marks and on outer by black striæ, slightly bent outwards below costa, excurved to vein 4, then oblique, some pale points beyond it on costa; subterminal line whitish slightly defined by brown on inner side, excurved below vein 7 and at middle, with slight brownish suffusion beyond it at discal fold; a terminal series of small black lunules; cilia chequered yellowish and black. Hind wing whitish tinged with brown, the inner area paler, the terminal area rather darker; a rather diffused curved postmedial line; cilia yellowish white with a slight brown line through them except towards tornus; the underside whitish, the costal and terminal areas suffused and irrorated with brown, a slight discoidal lunule, diffused curved postmedial line, and indistinct subterminal line.

Hab. W. China, Pu-tsu-fang, 3 ♀ type. *Exp.* 38–40 millim.

3378. Oroplexia albiflexura. (Plate CXX. fig. 16.)

Mamestra albiflexura, Wlk. xi. 726 (1857); Hmpsn. Moths Ind. ii. p. 210.

♂. Head and thorax pale reddish mixed with some black; palpi blackish at sides; tegulæ blackish at base and with blackish medial line; tarsi blackish ringed with rufous; abdomen pinkish rufous, paler at base. Fore wing pale pink irrorated with black and suffused in parts with fuscous; subbasal line double, waved, from

costa to submedian fold; antemedial line double, waved, oblique; claviform small, defined by black; orbicular narrow, oblique elliptical, defined by black; reniform defined by black on inner side and with white lunule with points above and below it on outer, constricted at middle; an indistinct waved medial line; postmedial line double filled in with pale pinkish, bent outwards below costa, then minutely waved, oblique to vein 6, angled inwards in discal and submedian folds and excurved at middle, some pale points beyond it on costa; subterminal line whitish, defined on inner side at middle by three dentate black marks defined by pale streaks extending to postmedial line and with slight black spots beyond it, angled outwards at vein 7 and slightly excurved at middle; a terminal series of small black lunules. Hind wing brown, the interspaces of basal half whitish; some whitish on termen from apex to vein 2; a terminal series of black lunules; the underside whitish, the costal and terminal areas suffused with pinkish and irrorated with fuscous, a small discoidal lunule, curved crenulate postmedial line, diffused subterminal line, and terminal series of small lunules.

Hab. "India," 1 ♂ type. *Exp.* 40 millim.

Genus **CALLARGYRA**, nov.

Type, *C. bayni*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair in front, the 3rd moderate, porrect; frons with vertical ridge; eyes large, round; antennæ of male ciliated; thorax clothed with hair and scales mixed, the pro- and metathorax with spreading crests, the mesothorax with divided crest; tibiæ moderately fringed with hair, the fore tarsi with strong curved spines on outer side of 1st joint; abdomen with dorsal crest at base and slight crests on 2nd and 3rd segments. Fore wing short, the apex rectangular, the termen evenly curved, crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3379. Callargyra bayni, n. sp.

♂. Head and thorax fulvous with a few white and black scales; lower part of frons yellowish; tegulæ yellow at base, with black medial line and white band near tips; abdomen white tinged with ochreous, the crests fulvous and black. Fore wing greyish suffused with brown and irrorated with black, the basal half of costal area and streaks in submedian fold and on inner margin fulvous yellow, the base of inner margin white; subbasal line represented by a black point on costa and oblique white bar from cell; antemedial line represented by a black striga from costa and a white band defined on each side by black from subcostal nervure to vein 1, strongly angled outwards in submedian interspace and interrupted by the fulvous streak in submedian fold, angled inwards on vein 1 below which it runs outwards as a fascia to join the postmedial line; orbicular and reniform white defined by black, the former

small, round, the latter a triangular mark angled inwards on median nervure and with some yellow in centre; an indistinct curved fuscous medial line; postmedial line white defined on each side by black, bent outwards below costa and angled at vein 6, angled inwards in discal fold and interrupted by a fulvous streak, angled inwards in submedian fold to near antemedial line and interrupted by the fulvous streak, angled outwards above vein 1, then bent inwards to join the antemedial line, some white striæ beyond it from costa and an oblique yellow fascia from apex to the postmedial line at vein 6; an indistinct dark subterminal line with the

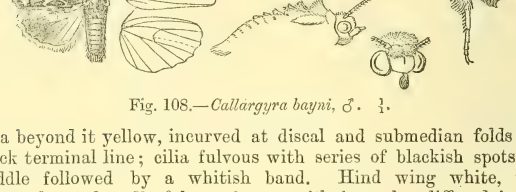


Fig. 108.—*Callargyra bayni*, ♂. ½.

area beyond it yellow, incurved at discal and submedian folds; a black terminal line; cilia fulvous with series of blackish spots at middle followed by a whitish band. Hind wing white, the terminal area broadly fulvous brown with irregular diffused inner edge angled inwards in submedian fold; a waved blackish terminal line slightly defined by white on inner side; cilia white with some brownish marks at base at middle and towards tornus. Underside of both wings white; fore wing with the costa irrorated with fuscous, the postmedial area broadly fuscous from below costa to vein 2; hind wing with punctiform black postmedial line from costa to vein 2 with diffused fuscous patch beyond it at middle.

Hab. Argentina, Mendoza, Trotero Soza (*Bayn*), 1 ♂ type. *Exp.* 28 millim.

Genus **SELAMBINA**.

Type.

Selambina, Wlk. xv. 1796 (1858) ..... *trajiciens.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching vertex of head and moderately scaled, the 3rd long; frons smooth; eyes large, round; antennæ of male serrate and fasciculate; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; build slender; tibiæ fringed with long hair; abdomen without crests. Fore wing with the apex somewhat produced, the termen slightly excised to vein 4, then oblique, not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3380. Selambina trajiciens.

Selambina trajiciens, Wlk. xv. 1796 (1858).

♂. Head and tegulæ bright rufous; thorax rufous mixed with white; antennæ with the basal joint tipped with white; tarsi slightly ringed with white; abdomen whitish suffused with rufous.

Fore wing fiery red, the costal area to median nervure and vein 2 suffused with brown to postmedial line; a very oblique pure white streak from base of costa to median nervure, interrupted at middle; antemedial line pure white defined by black on outer side, oblique from costa to vein 1 where it is bent inwards and terminates, emitting a short white streak on inner side just above median nervure; a white point at origin of vein 2; orbicular a minute black spot defined by white at sides; reniform pure white, its upper part linear, its lower angled inwards on median nervure and outwards beyond angle of cell; medial line blackish, arising from costa well beyond the cell, oblique and sinuous to lower extremity of reniform, then obliquely incurved, some white points beyond it on costa; postmedial line pure white defined on each side by black, arising from costa towards apex, produced to short streaks on the veins, incurved to vein 4 where it is angled outwards, then obliquely

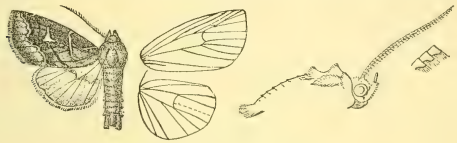


Fig. 109.—*Selambina trajiciens*, ♂. ½.

incurved, the veins beyond it with blackish streaks ending in minute white streaks at termen and on cilia, which have a blackish line through them. Hind wing white, the inner and terminal areas suffused with fiery red; an indistinct oblique sinuous medial line with blackish discoidal lunule on it; an indistinct curved postmedial line; a fine brown terminal line; the underside whitish suffused and irrorated with fiery red, the medial, postmedial, and terminal lines strong, black.

Hab. Brazil, Petropolis (*Doer*), 1 ♂, Organ Mts., Tijuca (*Wagner*), 1 ♂, Rio Janeiro (*Wilson*), 2 ♂. *Exp.* 32–36 millim.

Genus ARGYROSTROTIS.

	Type.
Argyrostrotis, Hübn. Verz. p. 253 (1827)	*amœnita*.
Thyria, Guen. Noct. ii. p. 351 (1852)	*bellinita*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately fringed with scales in front, the 3rd short; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed almost entirely with scales, the pro- and metathorax with spreading crests; tibiæ fringed with long hair, the hind tibiæ of male with fringe of extremely long hair on inner side; abdomen with dorsal crests on basal segments, the crest on 2nd segment extremely long and forked, anal tuft forked. Fore wing with the apex somewhat produced and acute, the termen crenulate, somewhat excised to vein 4, then oblique; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Abdomen orange.
  a. Abdomen without black dorsal fascia.
    a^1. Fore wing with oblique silvery patch at apex.
      a^2. Fore wing with double subterminal series of silvery spots below apex ..... *ditissima.*
      b^2. Fore wing with angled mark with two small marks beyond its lower part below apex ..... *amœnita.*
    b^1. Fore wing without apical silvery patch ..... *bellinita.*
  b. Abdomen with black dorsal fascia.
    a^1. Fore wing with oblique silvery patch at apex ..... *meres.*
    b^1. Fore wing without apical silvery patch ..... *vau-aurea.*
B. Abdomen dorsally suffused with brown.
  a. Thorax mostly black; fore wing with quadrate apical silvery patch ..... *phraortes.*
  b. Thorax red-brown.
    a^1. Fore wing with elliptical silvery patch at apex ..... *scione.*
    b^1. Fore wing with bifurcate silvery patch at apex with double series of spots below it ..... *aurifundens.*
    c^1. Fore wing with non-bifurcate mark from apex with single oblique series of spots below it ..... *eubotes.*
    d^1. Fore wing without silvery markings at apex.
      a^2. Hind wing pale yellow with broad brown terminal band ..... *decumana.*
      b^2. Hind wing uniformly suffused with brown ..... *panamensis.*

3381. Argyrostrotis ditissima. (Plate CXX. fig. 17.)

Thyria ditissima, Wlk. xii. 935 (1857).
Thyria fulgida, Feld. Reis. Nov. pl. 110. f. 37 (1874).
Thyria cræsita, Schaus, Trans. Am. Ent. Soc. xxx. p. 164 (1904).

Head and thorax bright rufous mixed with yellow and some whitish; palpi with the extremities of the joints yellow; frons with lateral dark spots; tegulæ with blackish marks near base, a medial line and whitish tips; pectus and legs white mixed with rufous; abdomen orange, the crests and anal tuft red-brown, the ventral surface white irrorated with red-brown. Fore wing yellowish suffused with red-brown and some blackish, the veins streaked with yellowish; subbasal line double, blackish filled in with yellowish, angled outwards on subcostal nervure, then oblique to submedian fold; antemedial line double, black filled in with yellowish, slightly angled outwards below costa, oblique to vein 1 and bent inwards to inner margin, an oblique yellowish striga before it from submedian fold to below vein 1; claviform absent; orbicular and reniform silvery white defined by black, the former with round spot above and two oblique striæ below forming a rather V-shaped mark, the latter with oblique spot with rather triangular spot below it on inner side, point at upper extremity, an oblique striga and point at middle, oblique spot at lower extremity and slight streak below it; postmedial line double, black filled in with yellowish, the inner line formed by black lunules slightly defined by yellowish on inner side, acutely angled inwards below costa, then strongly bent outwards, then minutely waved, slightly incurved at discal fold, oblique below vein 4 and bent outwards to inner margin, a yellowish slightly waved line beyond it, excurved to vein 4, then oblique, and

some white points on costa; a large oblique silvery white spot at apex where it is bidentate, a wedge-shaped subterminal spot below vein 7 with triangular spot beyond it, a lunulate spot below 6 with quadrate spot beyond it, a conical spot below vein 5 just before termen, a dentate mark defined by white below 4 and a small subterminal white spot below 3; a terminal blackish line defined on inner side by white striæ below veins 3 and 2; cilia yellowish with dark brown dentate line near tips which are whitish. Hind wing orange, the terminal area broadly reddish brown except at tornus leaving some yellow on termen from apex to vein 2 where there is a slight brown terminal line; cilia white, brown at tornus; the underside orange with the costal area slightly irrorated with black except towards base, the apex and termen white, a black point below upper angle of cell, postmedial line with black spot at costa, bent outwards below costa, then oblique waved, with red-brown suffusion beyond it below veins 5 and 1, terminal blackish points from apex to vein 3.

Ab. 1. Fore wing with the silver spot beyond lower angle of cell triangular.

Hab. Br. Honduras, Belize; Trinidad; Fr. Guiana, Cayenne, type † ♂ *fulgida* in Coll. Rothschild; Brazil, Amazons, Pará (*Bates*), 1 ♀ type, Castro Paraña (*D. Jones*), type † ♂ *crœsita* in U. S. Nat. Mus.; Colombia; Ecuador; Bolivia; Paraguay, Sapucay (*Foster*), 1 ♂. *Exp.* 30 millim.

3382. Argyrostrotis amœnita.

Noctua amœnita, Cram. Pap. Exot. iv. p. 47, pl. 312. f. D (1782).
Thyria ditissima, Druce, Biol. Centr.-Am., Het. i. p. 333 (part), nec Wlk.

Head and thorax red-brown mixed with pinkish white; palpi with whitish rings at tips of 1st and 2nd joints; frons whitish below and with lateral dark spots; tegulæ with brown spots near base and dark medial line; pectus white; legs rufous, the tarsi ringed with white; abdomen orange, the crests, anal tuft, and ventral

Fig. 110.—*Argyrostrotis amœnita*, ♂. ½.

surface rufous and red-brown. Fore wing pale pinkish suffused and irrorated with dark red-brown; subbasal line pinkish, waved, from costa to submedian fold; antemedial line double, black filled in with pinkish, slightly angled outwards below costa and excurved below the cell, an oblique pinkish striga before it from submedian fold to below vein 1; claviform absent; orbicular and reniform silver

defined by black, the former represented by an oblique spot above with bar below its extremity, the latter by an oblique bar above with spot below it conjoined to the orbicular on inner side, and on outer by some minute points with a more prominent striga beyond lower angle of cell; postmedial line double, black filled in with pinkish, the inner line formed by a series of black lunules, slightly angled inwards below costa, then bent outwards, then minutely waved, excurved to vein 4, then incurved and bent outwards to inner margin, a faint pinkish line beyond it almost obsolete to vein 4, then dentate, and some white points on costa; an irregular subterminal silver spot below apex with silver line from it, angled outwards at vein 6, inwards at vein 5 and outwards to near termen at vein 4 with a small spot beyond it above vein 5; the apical area suffused with black to vein 4, followed by some blackish subterminal lunules to inner margin; a terminal series of small black lunules slightly defined by white on inner side; cilia pinkish at base, red-brown at tips. Hind wing orange, the terminal area broadly red-brown; cilia white, red-brown at apex; the underside yellow, the costal area tinged with pink and irrorated with red-brown except at base, postmedial line bent outwards below costa, waved to vein 6, then oblique, the area beyond it suffused with red-brown from vein 5 to tornus.

Hab. Panama, Chiriqui (*Champion*), 1 ♂, Godman-Salvin Coll.; Surinam. *Exp.* 30 millim.

3383. Argyrostrotis bellinita. (Plate CXX. fig. 18.)

Thyria bellinita, Guen. Noct. ii. p. 357 (1852).

♂. Head and thorax pinkish mixed with red-brown; tegulæ with some blackish spots at base and blackish medial line; abdomen orange, the crests, anal tuft, and ventral surface rufous. Fore wing pale pinkish suffused and irrorated with dark red-brown; subbasal line represented by black striæ from costa and cell defined by pinkish on outer side; antemedial line black defined by pinkish on inner side, waved; orbicular and reniform silver defined by black, the former represented by an oblique striga above and rather lunulate mark below connecting it with the latter, which has a silver striga above on inner side and on outer points beyond upper and lower angles of cell; postmedial line formed of black lunules defined on each side by pinkish, slightly angled inwards below costa, then bent outwards, excurved to vein 4, then incurved and bent outwards to inner margin, some white points beyond it on costa; apical area suffused with dark red-brown to vein 5; the subterminal line whitish, minutely waved, incurved below costa and below vein 5, defined on inner side by small dark brown lunules; a terminal series of small black lunules defined on inner side by white; cilia whitish at base, red-brown at tips. Hind wing orange, the terminal area broadly

red-brown, its inner edge angled outwards at vein 4; cilia white; the underside yellow, the costal area except at base and terminal area tinged with pinkish and irrorated with red-brown, postmedial line bent outwards below costa, then minutely waved, oblique, two terminal black points below apex defined by white on inner side.

Hab. Panama, La Chorera (*Dolby-Tyler*), 1 ♂; Brazil, Pernambuco. *Exp.* 28 millim.

3384. Argyrostrotis meres. (Plate CXX. fig. 19.)

Thyria meres, Druce, A. M. N. H. (7) xi. p. 201 (1903).

Head and thorax rufous mixed with grey and black; palpi with slight white rings at extremities of 1st and 2nd joints; lower part of frons whitish; tegulæ with black spots near base and black lines at middle and near tips; patagia with oblique blackish bars; abdomen orange with dorsal black fascia and the extremity black, the basal crests rufous, the ventral surface irrorated with rufous and black. Fore wing rufous suffused with black and irrorated with grey; the veins streaked with rufous; subbasal line grey, angled inwards to base in cell and ending at vein 1, an oblique grey striga beyond it across the cell; antemedial line black defined on inner side by grey, oblique and slightly sinuous to vein 1 and bent inwards to inner margin, an oblique grey streak before it from median nervure to vein 1; orbicular represented by a slight oblique silvery U-shaped mark with oblique silver spot above its upper extremity; reniform with oblique silver spot with another spot below it on inner side, a slight curved line at middle, point at upper extremity and oblique bar at lower extremity; postmedial line grey defined on inner side by black lunules and on outer side by a black line angled inwards below costa, then strongly bent outwards, oblique to vein 4, then inwardly oblique and bent outwards to inner margin, some white points beyond it on costa; an oblique elliptical silver apical patch bifid at apex, with silver lunules below it above veins 6 and 5 with three small marks beyond them between veins 7 and 4, slight silver subterminal lunules above veins 3 and 2; a terminal series of small blackish lunules; cilia with pale lines at base and tips. Hind wing orange-yellow with broad terminal black-brown band; cilia white chequered with blackish from apex to vein 2; the underside with the costal area whitish irrorated with red-brown except at base, the terminal area whitish suffused with red-brown, a small discoidal spot and postmedial line bent outwards below costa, then minutely crenulate and ending at submedian fold.

Hab. Colombia, Minca (*H. H. Smith*); Ecuador, Sarayacu (*Buckley*); Br. Guiana (*Rodway*), 1 ♂; Brazil, Castro Paraña, in Coll. D. Jones. *Exp.* 28–36 millim. Type† in Coll. Druce.

3385. **Argyrostrotis vau-aurea**, n. sp. (Plate CXX. fig. 20.)

♀. Head and thorax dark red-brown mixed with yellowish; palpi with the extremities of 1st and 2nd joints white; tegulæ with the basal half yellowish with paired dark brown patches; legs yellowish-white streaked with dark red-brown; abdomen orange with dorsal series of black spots, the crests and anal tuft red-brown, the ventral surface irrorated with red-brown. Fore wing yellowish almost wholly suffused with black-brown, the veins slightly streaked with yellowish; subbasal line represented by blackish spots below costa and cell defined on each side by yellowish at costa; antemedial line black defined on each side by yellow, obliquely excurved and slightly sinuous from costa to vein 1, bent inwards to inner margin, an oblique yellowish striga before it from submedian fold to vein 1; orbicular with fine yellowish annulus conjoined to antemedial line, round; reniform with two golden-silvery striæ on inner side, an oblique yellowish bar in middle with silver striga beyond it with point below it and oblique silver streak below its extremity; postmedial line yellowish defined on inner side by black lunules, angled inwards below costa, then bent outwards, then dentate, excurved to vein 4, then incurved and bent outwards to inner margin, traces of a greyish line beyond it oblique to vein 4, then dentate, and some white points on costa; subterminal line whitish, dentate, oblique to vein 6, then angled outwards to near termen at veins 4, 3, and 1; a terminal series of small black lunules defined by whitish on inner side; cilia blackish with fine white line at base and intersected with white at veins 6 and 4. Hind wing orange, the terminal area broadly black-brown, its inner edge excurved at middle; cilia whitish with series of black points; the underside yellow, the costal and terminal areas whitish irrorated and suffused with dark brown, postmedial line bent outwards below costa, then oblique, waved.

Hab. Trinidad; Br. Guiana (*Roberts*), 2 ♀ type. *Exp.* 36 millim.

*3386. **Argyrostrotis phraortes.** (Plate CXX. fig. 21.)

Thyria phraortes, Druce, A. M. N. H. (7) xi. p. 202 (1903).

Head rufous mixed with whitish; palpi black with slight white rings at extremities of 1st and 2nd joints; lower part of frons yellowish white; thorax black mixed with some white; tegulæ with the basal half white with some black spots; patagia with white and rufous patches; metathoracic crests mixed with rufous; pectus and legs rufous mixed with black and white, the coxæ silvery white, the tarsi rufous; abdomen dorsally suffused with blackish and white, the crests at base rufous, some yellowish on sides at base, the ventral surface white irrorated with black. Fore wing rufous mostly suffused with black leaving the inner medial area rufous, the veins streaked with rufous; subbasal line whitish, angled inwards in cell and ending at vein 1, an oblique white striga beyond it across the cell; antemedial line black defined on inner side by rufous and by

white at costa, oblique and slightly sinuous to vein 1, bent inwards to inner margin, an oblique rufous streak before it from median nervure to vein 1; orbicular rounded, slightly defined on inner side by silver and on outer by two spots; reniform with two oblique silver spots on inner side, an obliquely curved whitish line in centre and slight striga on outer edge with silver points at upper and lower extremities; postmedial line yellowish defined on inner side by black lunules and with white bar at costa, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some white marks beyond it on costa; an oblique quadrate silver apical patch, bifid at apex, with two obliquely placed small spots below it; small subterminal black lunules between veins 4 and 2 with yellow marks on outer edge of those below veins 3 and 2; a series of silvery white striæ just before termen; cilia black with a fine yellow line at base. Hind wing very pale yellow with broad black-brown terminal band; cilia white; the underside yellowish white, the costal area slightly irrorated with black, a small discoidal black spot, postmedial line bent outwards below costa, then crenulate and with some black suffusion beyond it from vein 5 to tornus.

Hab. N. Peru, Huancabamba (*Boettger*), type † in Coll. Druce; Brazil, Rio Grande do Sul. *Exp.* 32–36 millim.

*3387. Argyrostrotis scione. (Plate CXX. fig. 22.)

Thyria scione, Druce, A. M. N. H. (7) xi. p. 202 (1903).

♂. Head and thorax rufous mixed with yellowish; pectus with some white hair; abdomen whitish suffused with rufous, the basal crests rufous. Fore wing rufous suffused in parts with red-brown; subbasal line whitish, angled outwards in submedian fold where there is a pale streak from it to antemedial line, ending at vein 1; antemedial line blackish defined on inner side by grey, oblique to vein 1 and bent inwards to inner margin, an oblique pale striga before it from submedian fold to vein 1; orbicular represented by an oblique silver V-shaped mark, its upper extremity expanding into a spot; reniform with two silver spots on inner side, the upper oblique wedge-shaped, a curved silver line at middle, a striga at upper extremity and two obliquely placed points at lower; postmedial line grey defined on inner side by red-brown lunules, angled inwards below costa, then strongly bent outwards, oblique to vein 4, inwardly oblique to vein 1 and bent outwards to inner margin, some white marks beyond it on costa; a large oblique elliptical silver apical patch with two wedge-shaped spots below it, with three marks beyond them on termen followed by some striæ just before termen and a slight subterminal striga below vein 3; cilia with fine whitish line at base. Hind wing white tinged with yellow, with broad red-brown terminal band; cilia white; the underside white, the costal area slightly tinged with rufous, an indistinct postmedial line bent outwards below costa, then waved, and traces of a subterminal band.

Hab. Colombia, Antioquia, Frontino (*Salmon*), type † ♂ in Coll. Druce. *Exp.* 36 millim.

3388. **Argyrostrotis aurifundens.** (Plate CXX. fig. 23.)

Thyria aurifundens, Wlk. xv. 1788 (1858).
Thyria ditissima, Druce, Biol. Centr.-Am., Het. i. p. 333 (part.), nec Wlk.

Head and thorax red-brown mixed with greyish and some black scales; palpi with dark band near extremity of 2nd joint; frons with blackish bar; tegulæ with some black marks near base and two medial lines; patagia with black spot near base; tarsi slightly ringed with white; abdomen red-brown mixed with blackish, the lateral area yellowish. Fore wing red-brown largely suffused with black, the veins with paler streaks; subbasal line greyish, waved, from costa to submedian fold, defined by black on inner side; antemedial line black defined by greyish on inner side, oblique from costa to vein 1 and slightly angled inwards on median nervure, bent inwards to inner margin, an oblique striga before it from submedian fold to below vein 1; claviform small, slightly defined by black; orbicular and reniform silver with a golden tinge, defined by black, the former represented by a U-shaped mark with spot above its upper extremity, the latter formed by an oblique mark with round spot below it on inner side, a point at upper extremity, a curved line at middle, spot at lower extremity and slight streak below; postmedial line double, black filled in with greyish, the inner line formed by black lunules slightly defined by greyish on inner side, angled inwards below costa to the orbicular, strongly bent outwards below costa, then minutely waved, slightly incurved at discal fold, incurved below vein 4, a greyish line beyond it, oblique to vein 4, then dentate, and some white points on costa; a large oblique silver spot at apex, where it is bidentate, with two wedge-shaped subterminal spots below it with two spots beyond them just before termen, a rather U-shaped spot below vein 5, a slight V-shaped spot below vein 4 and a subterminal striga below vein 3; blackish lunules on termen below veins 3 and 2 slightly defined by grey on inner side; a pale line at base of cilia; whitish between veins 7 and 4 where the cilia are tipped with white. Hind wing orange, the costal and terminal areas broadly red-brown; cilia with fine pale line at base and whitish tips; the underside with the costal area pinkish irrorated with red-brown, the terminal area suffused with red-brown below vein 5, a blackish spot at upper angle of cell, a postmedial line bent outwards below costa, waved to vein 6, then oblique, and small terminal black lunules from apex to vein 5 defined by white on inner side.

Ab. 1. Hind wing wholly suffused with red-brown.

Ab. 2. Head, thorax, and fore wing with the ground-colour black-brown, not red-brown.—Peru.

Hab. Mexico, Jalapa (*Hoege*), 1 ♂; Panama, Chiriqui (*Champion*), 1 ♂, Godman-Salvin Coll., Cana Mines (*Tylecote*), 1 ♀; Brazil, Rio Janeiro, Rio Derg, Rio Grande do Sul, type † ♀ in Mus. Oxon.
Exp. 30–34 millim.

*3389. Argyrostrotis eubotes. (Plate CXX. fig. 24.)

Thyria eubotes, Druce, A. M. N. H. (7) xi. p. 201 (1903).

♀. Head and thorax rufous mixed with red-brown and some black; tegulæ with black-brown spots near base and blackish medial line; coxæ with white scales; abdomen rufous with some yellow at base on sides and below, the crests mixed with black. Fore wing rufous mostly suffused and irrorated with dark red-brown; subbasal line rufous, defined on each side by black marks, waved, from costa to vein 1; antemedial line black defined on inner side by rufous, waved, excurved below the cell, an oblique rufous striga before it from submedian fold to vein 1; orbicular with rufous striga on inner side and two silvery striæ on outer, the upper oblique, the lower almost or quite contiuent with the reniform, which is defined on inner side by an oblique silver striga above and spot below, a curved rufous line at middle and silver points at upper and lower extremities; postmedial line rufous, defined on inner side by black lunules, angled inwards below costa, then bent outwards, obliquely excurved to vein 4, inwardly oblique to vein 1 and bent outwards to inner margin, some white points beyond it on costa; an oblique wedge-shaped silver apical patch with small lunule below it followed by an oblique striga with small spot beyond it, then by a faint waved rufous line with slight brown lunules on its inner side; a terminal series of small brown lunules defined on inner side by a slight waved rufous line; cilia with yellow line at base, black medial line and black and white tips. Hind wing with the basal half orange-yellow, its outer edge angled at middle, the terminal half red-brown; cilia white tinged with rufous at base; the underside with the costal area irrorated with rufous, the terminal area suffused with red-brown, postmedial line bent outwards below costa, then oblique waved.

Ab. 1. Fore wing with the apical silvery markings obsolescent.

Hab. Colombia, Minca (*H. H. Smith*), type † ♂ in Coll. Druce; Brazil, Rio Grande do Sul. *Exp.* 30 millim.

*3390. Argyrostrotis decumana. (Plate CXX. fig. 25.)

Eriopus decumana, Feld. Reis. Nov. pl. 110. f. 25 (1874).
Thyria satana, Schaus, Trans. Am. Ent. Soc. xxx. p. 164 (1904).

♂. Head and thorax red-brown mixed with dark brown and yellowish; tegulæ with black patches near base and indistinct medial line; abdomen yellowish white dorsally tinged with rufous except at base. Fore wing red-brown irrorated and suffused with dark brown; subbasal line black defined on outer side by yellowish, excurved, from costa to vein 1; antemedial line black defined on inner side by yellowish, obliquely excurved and minutely waved; orbicular defined by yellowish, its outer edge produced to a point in discal fold; reniform with oblique silvery white bar on inner edge followed by a dark line, then a yellowish lunule and curved

yellowish line on outer edge, a silvery white point beyond its lower extremity; traces of an oblique diffused sinuous dark line from beyond lower angle of cell to inner margin; postmedial line formed by minute black lunules defined on outer side by yellowish, strongly bent outwards below costa, rather oblique to vein 4, then strongly incurved, some whitish points beyond it on costa; subterminal line formed of slight white lunules defined on inner side by diffused dark spots, excurved below vein 7 and at middle, angled inwards at discal fold and incurved below vein 3; a terminal series of black lunules slightly defined on inner side by white. Hind wing very pale yellow, the terminal area red-brown; cilia chequered white and rufous; the underside pale yellow, the costal area irrorated with red-brown, a small spot at upper angle of cell, and postmedial line formed of striæ.

Hab. Brazil, type † ♂ in Coll. Rothschild, São Paulo, Castro Paraña (*D. Jones*), type † ♂ *satana* in U.S. Nat. Mus. *Exp.* 38 millim.

*3391. Argyrostrotis panamensis.

Callopistria panamensis, Druce, Biol. Centr.-Am., Het. i. p. 324, pl. 30. f. 2 (1889).

Head, thorax, and abdomen brown mixed with grey; antennæ brown; legs greyish. Fore wing dark brown irrorated with grey; subbasal line grey, dentate; antemedial line black defined on inner side by grey, excurved; orbicular and reniform with grey annuli, the former oblique elliptical, the latter narrow, oblique; postmedial line black, defined on outer side by grey, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line whitish, dentate and oblique from costa to discal fold, angled outwards to termen at vein 4, then incurved and dentate; a terminal series of black lunules defined on inner side by grey. Hind wing brown, the base and inner area paler.

Hab. Panama, Chiriqui. *Exp.* 36 millim. This species is unknown to me.

Genus **DATA**.

	Type.
Data, Wlk. Journ. Linn. Soc., Zool. vi. p. 191 (1862).....	*thalpophiloides*.
Lasiosceles, Beth.-Baker, Nov. Zool. xiii. p. 204 (1906) ...	*pratti*.

Proboscis fully developed; palpi with the 2nd joint moderately scaled and reaching to about vertex of head, the 3rd long; frons rounded; eyes large, rounded; antennæ of male ciliated; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; pectus clothed with long hair; mid and hind femora and tibiæ of male with large tufts of hair, the hind tarsi with the 1st joint fringed with hair; abdomen with dorsal series of crests. Fore wing with the apex somewhat produced and acute, the termen crenulate, a slight scale-tooth at tornus; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the postmedial line oblique from below costa to vein 1, then bent inwards to inner margin ... *pratti.*
B. Fore wing with the postmedial line erect from below costa to vein 4, then incurved or oblique.
a. Fore wing with green markings on basal area and beyond the reniform ..... *aroa.*
b. Fore wing without green markings.
a[1]. Fore wing with the veins streaked with whitish, the subterminal line white .. .. *callopistrioides.*
b[1]. Fore wing with the veins not streaked with whitish, the subterminal line bluish white towards costa ... *thalpophiloides.*

*3392. Data pratti. (Plate CXX. fig. 26.)

Lasiosceles pratti, Beth.-Baker, Nov. Zool. xiii. p. 205 (1906).

♂. Head and tegulæ deep red-brown; palpi white in front and at extremities of 1st and 2nd joints; frons white at sides; white bars between antennæ and on vertex of head; tegulæ with white lines near base, at middle and tips; thorax red-brown mixed with yellow and white; patagia edged with red-brown and white, the vertex of thorax with two white streaks and oblique bars on metathorax; pectus and legs rufous, the tibiæ and tarsi streaked with white; abdomen yellowish rufous. Fore wing yellowish tinged with rufous, the costal area to median nervure and terminal area deep red-brown, the veins streaked with white; an oblique white line from base of costa, followed by an oblique subbasal line from costa to base at submedian fold, then an oblique line from subcostal nervure to submedian fold with dark brown marks before and beyond it below the cell; antemedial line white defined on each side by black, acutely angled outwards on subcostal nervure and inwards on median nervure, then excurved and oblique to inner margin, an oblique black and white bar before it from submedian fold to below vein 1; claviform minute, black; orbicular a U-shaped white mark with its outer extremity produced; reniform defined by oblique white bars on inner and outer sides and a curved line below from vein 5 well beyond angle of cell; an oblique black maculate line from beyond lower angle of cell to below submedian fold; postmedial line white defined on inner side by black spots and on outer by a fine black line, angled inwards below costa, then strongly bent outwards, then obliquely curved and bent inwards to inner margin, some white points beyond it on costa; an oblique white band from apex to just above inner margin beyond middle, very slightly incurved at middle; subterminal line fine, white, arising from vein 5, angled outwards at vein 4, then oblique and angled inwards to the band at submedian fold and bent outwards to tornus; a fine waved terminal white line; cilia intersected with white. Hind wing yellow suffused with rufous except at base; the underside yellow, the costal area suffused with rufous, a small rufous discoidal spot, and indistinct postmedial line bent outwards below costa, then minutely waved.

Hab. Br. New Guinea, Ekeikei (*Pratt*), type † ♂ in Coll. Bethune-Baker, Mt. Kebea. *Exp.* 46 millim.

*3393. Data aroa. (Plate CXX. fig 27.)

Thyria aroa, Beth.-Baker, Nov. Zool. xiii. p. 199 (1906).

♀. Head and thorax red-brown mixed with grey; lower part of frons whitish; small tufts of white hair behind antennæ; tegulæ with slight whitish medial line and blackish spots at sides; spurs and tarsi ringed with white; abdomen orange, the crests red-brown mixed with grey, followed by slight white spots, the anal tuft red-brown at tip, the ventral surface white at base, then red-brown irrorated with white. Fore wing dark red-brown mixed with grey, the veins with pale streaks; a tuft of dark brown and white hairs at base of inner margin; a subbasal white striga from costa with some green scales before it and a green spot below the cell followed by a small white spot; antemedial line double, black filled in with whitish, oblique from costa to vein 1, then bent inwards to inner margin; orbicular with slight pale annulus, triangular, a curved white bar across the cell, concave towards base, before the reniform, which is a narrow lunule with pale annulus with two small green spots at its upper extremity and a triangular patch at lower extremity extending to the postmedial line; a slight oblique dark shade from lower angle of cell to inner margin; postmedial line black defined by white on outer side, strongly bent outwards and obsolescent below costa, slightly excurved between discal fold and vein 3, then incurved and lunulate, some white points beyond it on costa; subterminal line defined by red-brown on inner side, represented by three oblique white striæ from costa to vein 6, then slight, whitish, angled inwards in discal fold, excurved at middle, then oblique; a terminal series of small black lunules slightly defined by white on inner side; cilia with a black line through them and white points at the veins. Hind wing orange-yellow, the terminal area cupreous red with sinuous inner edge and curved red line before it between veins 6 and 2; cilia whitish with a red line through them; the underside white tinged with yellow except on costal and terminal areas, the former irrorated with red-brown, the latter slightly tinged with red, a small discoidal spot, crenulate postmedial line, and terminal series of small dentate marks from apex to vein 2.

Hab. Br. New Guinea, Aroa R. (*Meek*), type † ♀ in Coll. Rothschild. *Exp.* 40 millim.

3394. Data callopistrioides. (Plate CXX. fig. 28.)

Thalpophila callopistrioides, Moore, P. Z. S. 1881, p. 344; Hmpsn. Moths Ind. ii. p. 225.

♀. Head and thorax deep red-brown mixed with blackish and some whitish; abdomen yellow, the dorsal crests deep red-brown, the extremity and ventral surface pale red-brown with darker irroration. Fore wing deep red-brown mixed with some whitish,

the veins with slight whitish streaks; subbasal line white, angled inwards on subcostal nervure, then excurved and with an oblique white striga beyond it in cell; antemedial line white defined on each side by blackish, angled outwards below costa, then retracted, oblique to vein 1, then inwardly oblique; claviform represented by a slight dark mark; orbicular and reniform narrow with white annuli slightly defined by black, the former oblique elliptical, the latter oblique, its inner edge straight, its upper and lower extremities produced and with white point beyond the latter; postmedial line white, angled inwards below costa, then strongly bent outwards, then defined by small black lunules on inner side, oblique below vein 4, some white points beyond it on costa; subterminal line white, defined on inner side by blackish marks in the interspaces, larger towards costa, angled outwards on veins 7, 6, 4, and inwards at discal and submedian folds: a terminal series of blackish lunules defined by white on inner side; cilia with a fine white line at base. Hind wing yellow, the terminal area red-brown, on costa extending to middle; a terminal series of brown lunules; cilia with a fine pale line at base; the underside with the costal and terminal areas pale irrorated with red-brown, a dark discoidal spot and crenulate postmedial line.

Hab. Assam, Khásis, 1 ♀ type. *Exp.* 40 millim.

3395. Data thalpophiloides.

Data thalpophiloides, Wlk. Journ. Linn. Soc., Zool. vi. p. 192 (1862); Hmpsn. Moths Ind. ii. p. 225.
Thalpophila cuprea, Moore, P. Z. S. 1877, p. 604. pl. 59. f. 10.
Thalpophila delineata, Moore, Lep. Ceyl. iii. p. 25, pl. 146. f. 5 (1884).

Head and thorax deep red-brown mixed with some pale reddish; tarsi slightly ringed with white; abdomen yellow, the dorsal crests deep red-brown, the extremity and ventral surface pale mixed with deep red-brown. Fore wing deep red-brown mixed with some blackish and slightly suffused with purplish grey, the veins slightly

Fig. 111.—*Data thalpophiloides*, ♂. ½.

paler; subbasal line white with blackish patches on each side of it, angled inwards on subcostal nervure and ending at submedian fold; antemedial line whitish slightly defined on each side by black, angled outwards below costa, excurved from subcostal nervure to vein 1, then oblique to inner margin; claviform narrow defined by black, intersected by the antemedial line and with two black spots

between its base and inner margin; orbicular and reniform with slight pale annuli faintly defined by black, the former small, V-shaped, open above, the latter narrow, produced at upper and lower extremities and with one or two white points beyond the latter; postmedial line white, bent outwards below costa, then defined on inner side by a series of small black lunules with blackish dentate marks before them from vein 5 to inner margin, very slightly angled inwards at discal fold and incurved below vein 4, some white points beyond it on costa; subterminal line pale, bluish grey towards costa, defined on inner side by a series of blackish marks in the interspaces, angled outwards at veins 7, 6 and below 5, then incurved; a terminal series of small black lunules defined by grey on inner side; a fine pale line at base of cilia. Hind wing yellow, the terminal area red-brown; a terminal series of slight brown lunules; cilia with a fine pale line at base; the underside with the costal and terminal areas pale irrorated with red-brown, a small discoidal spot and irregularly crenulate postmedial line.

Hab. Ceylon, 1 ♀ type *delineata*; Andamans, 2 ♀ type *cuprea*; Singapore (*Ridley*), 1 ♂; Borneo, Sarawak (*Wallace*), 2 ♂; Java, Arjuno (*Doherty*), 1 ♀; Queensland, Kuranda. *Exp.* 34–40 millim. Type † in Mus. Oxon.

Genus **NEOPISTRIA**, nov.

Type, *N. viridinotata*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to vertex of head and moderately fringed with hair in front, the 3rd moderate; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal crests on basal segments. Fore wing with the apex rounded, the termen excurved at middle and excised below apex and above tornus, where there is a slight scale-tooth; veins 3 and 5 from near angle of cell; 6 from upper angle; 7, 8, 9, 10 stalked; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

3396. **Neopistria viridinotata.**

Perciana viridinotata, Hmpsn. Moths Ind. ii. p. 296 (1894).

♂. Head, tegulæ, and prothoracic crest emerald-green mixed with some rufous; palpi, thorax, pectus, and legs rufous; abdomen ochreous mixed with rufous. Fore wing purplish rufous slightly irrorated with black; subbasal line represented by double black striæ from costa and cell filled in with green; antemedial line indistinctly double filled in with green, strongly excurved; orbicular and reniform with green annuli incompletely defined by black scales, the former elliptical, conjoined to antemedial line and extending below the cell, the latter triangular and with short green fascia above it below costa, a green fascia on medial part of inner margin; postmedial line represented by a series of small black

lunules with white point at costa and small white lunules on its outer side in submedian interspace and above inner margin, bent outwards below costa where it is crossed by the green fascia, excurved to vein 4 and with some green beyond it below vein 2 and some white points on costa; subterminal line very faintly represented by black scales and with green marks before it below costa

Fig. 112.—*Neopistria viridinotata*, ♂. ½.

and vein 4; a terminal series of faint black spots; a fine pale line at base of cilia. Hind wing whitish tinged with red-brown; a faint discoidal bar, sinuous postmedial line angled outwards at middle, and fine terminal line; cilia with a brown line through them; the underside yellowish white, the costal and terminal areas irrorated with red-brown, a discoidal spot and curved postmedial line.

Hab. Sikhim (*Möller*), 1 ♂. *Exp.* 32 millim. Type † in Coll. Rothschild.

Genus **ERIOPUS**.

	Type.
Eriopus, Treit. Schmett. Eur. v. (1) p. 365 (1825)	*juventina.*
Callopistria, Hübn. Verz. p. 216 (1827)	*juventina.*
Agabra, Wlk. Journ. Linn. Soc., Zool. vi. p. 136 (1862)	*trilineata.*
Obana, Wlk. Journ. Linn. Soc., Zool. vi. p. 190 (1862); nec Wlk. xxiv. 1103 (1862)	*pulchrilinea.*
Eulepa, Wlk. Journ. Linn. Soc., Zool. vii. p. 54 (1864)	*niveigutta.*
Cotanda, Moore, P. Z. S. 1881, p. 374	*placodoides.*
Methorasa, Moore, P. Z. S. 1881, p. 374	*latreillei.*
Herrichia, Grote, New Check List, p. 38 (1882), non descr. nec Staud. Lep. 1870	*mollissima.*
Euherrichia, Grote, Papilio, ii. p. 122 (1882), non descr.; id. Ent. Am. vi. p. 165 (1890)	*mollissima.*
Gnamptocera, Butl. A. M. N. H. (6) viii. p. 71 (1891)	*minuta.*
Haploolophus, Butl. A. M. N. H. (6) viii. p. 71 (1891)	*mollissima.*
Dissolophus, Butl. A. M. N. H. (6) viii. p. 71 (1891)	*chloriza.*
Hyperdasys, Butl. A. M. N. H. (6) viii. p. 71 (1891)	*exotica.*
Hemipachycera, Butl. A. M. N. H. (6) viii. p. 71 (1891)	*rivularis.*
Rhoptrotrichia, Butl. A. M. N. H. (6) viii. p. 71 (1891)	*maillardi.*
Platydasys, Butl. P. Z. S. 1892, p. 126	*pryeri.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching vertex of head and fringed with long hair in front which is produced to a point at extremity, the 3rd joint rather long and porrect; frons smooth; eyes large, round; antennæ of male typically ciliated; thorax clothed with hair and scales mixed, the pro- and metathorax with spreading crests, the mesothorax with paired crests; tibiæ fringed with long hair; abdomen with large crests on three basal segments. Fore wing with the apex somewhat produced and acute,

the termen crenulate, excised to vein 4 where it is more or less angled, then oblique, a scale-tooth at tornus; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male serrate and fasciculate with small tuft of hair on upperside at one third of shaft, then contorted and with three spinous bristles; the tibiæ and 1st joint of tarsi fringed with long hair.

3397. Eriopus jamaicensis.

Eriopus jamaicensis, Möschl. Abh. Senck. Ges. xiv. p. 52, f. 24 (1886).

Head and thorax olive-green mixed with some white scales; palpi rufous, tegulæ with slight white medial line; tibiæ red-brown ringed with white; abdomen pale olive-green with whitish segmental lines, the crests blackish. Fore wing olive-green suffused and irrorated in parts with black, the costal area and inner part of medial area yellowish, the veins with yellowish streaks; subbasal line represented by white striæ defined on each side by black from costa and cell, with an oblique white striga beyond it across the cell; antemedial line white defined on inner side by black and on outer slightly by brown, angled outwards below costa, oblique to

Fig. 113.—*Eriopus jamaicensis*, ♂. ⅔.

vein 1, then bent inwards to inner margin, an oblique white striga defined on each side by black before it from submedian fold to vein 1; claviform represented by a slight oblique blackish striga; orbicular with olive centre and white annulus defined on outer side by black, oblique elliptical; reniform white defined by black except above and with olive lunule in centre, its lower extremity much produced; medial line blackish, oblique from costa to median nervure, then dentate; postmedial line double, black filled in with yellowish and with white at costa and inner margin, angled inwards below costa, then bent outwards, then minutely waved and incurved below vein 4, some white points beyond it on costa; subterminal line white defined on inner side by black patches and below vein 3 by small lunules, with obliquely placed spots above veins 7, 6, angled inwards above vein 5, then outwards to termen at vein 4, then obsolescent, lunulate and incurved; a terminal series of black striæ defined on inner side by a fine white line reduced to striæ below vein 4; cilia yellowish at base, blackish at tips. Hind wing whitish tinged with red-brown, the terminal area suffused

with red-brown; cilia white with a brown line through them from apex to vein 2; the underside white slightly irrorated with brown especially on costal area, an oblique dark bar from middle of costa to discal fold, a small black discoidal spot, minutely waved curved postmedial line, and some small black lunules on termen from apex to vein 2 defined by white on inner side, the lunule above vein 5 larger.

Hab. Jamaica (*Hyatt*) 1 ♀, (*Kaye*) 1 ♀, Runaway Bay (*Walsingham*), 3 ♂; Cuba, Tanamo (*Schaus*), 1 ♀, Baracoa (*Schaus*), 2 ♀. *Exp.* 24–28 millim.

Sect. II. Antennæ of male with the basal part of shaft thickened, then with angular projection from upperside.

A. Antennæ of male with the angular projection at about two thirds of shaft clothed with hair in front forming a hollow, then with scale-tooth on upperside; the tibiæ, spurs, and tarsi with very large tufts of hair.

3398. Eriopus scriptiplena.

Dianthœcia scriptiplena, Wlk. Journ. Linn. Soc., Zool. vi. p. 190 (1862); Swinh. Cat. Het. Mus. Oxon. ii. p. 37.
Eriopus wallacii, Feld. Reis. Nov. pl. 110. f. 26 (1874).
Platydasys pryeri, Butl. P. Z. S. 1892, p. 126, ♀ (nec ♂).

Head and thorax rufous mixed with red-brown; tegulæ with double blackish medial line; abdomen pale rufous, the crests mixed with red-brown. Fore wing rufous suffused in parts with red-brown especially in, below and beyond end of cell; subbasal line represented by double dark red-brown striæ from costa and spot

Fig. 114.—*Eriopus scriptiplena*, ♂. ½.

below the cell; antemedial line double, indistinct except at costa, oblique and sinuous to submedian fold, bent inwards to inner margin, with a dark red-brown patch before it in and below cell; orbicular with red-brown centre and rufous annulus defined by red-brown, rather oblique elliptical; reniform with two white points on inner side and on outer points at upper extremity and middle and elongate spot at lower extremity, all defined by red-brown; postmedial line double filled in with rufous, strongly bent outwards below costa, then dentate, incurved below vein 4 and bent outwards to inner margin, some rufous points beyond it on costa and an oblique red-brown streak before it below vein 2; subterminal line indistinct, rufous, minutely waved, defined on inner side by small

dentate red-brown marks below costa and with dentate red-brown mark beyond it at middle; a terminal series of small red-brown lunules defined on inner side by whitish, with larger lunule above vein 5; cilia rufous at base, red-brown at tips. Hind wing red-brown with slight waved darker terminal line; cilia chequered white and red-brown; the underside whitish irrorated with red-brown, a faint diffused red-brown bar from middle of costa, red-brown discoidal lunule, postmedial line bent outwards below costa, waved to vein 6, then sinuous, and terminal series of small spots.

Ab. 1. Fore wing without the white spot at lower extremity of cell.

Hab. Malacca, Perak, Goping (*Kunstler*), 1 ♂; Borneo, Kuching (*Shelford*), 1 ♂, Sandakan (*Pryer*), 2 ♂; Labuan (*Everett*), 1 ♀ type *pryeri* ♀; Amboina, type † ♀ *wallacii* in Coll. Rothschild. *Exp.* 36–38 millim. Type † in Mus. Oxon.

B. (*Platydasys*). Antennæ of male with the angular projection at about one third of shaft, clothed with hair in front forming a hollow, then with short ridge of scales; the tibiæ and tarsi with very large tufts of hair.

3399. Eriopus pryeri.

Platydasys pryeri, Butl. P. Z. S. 1892, p. 126, pl. 6. f. 6, ♂.

♂. Head and thorax bright red-brown mixed with some blackish; tegulæ with black medial line; patagia with some black scales on upper edge; pectus with lateral tufts of ochreous hair; abdomen greyish brown, the crests rufous and black. Fore wing bright rufous suffused with dark red-brown and blackish; subbasal line yellowish white, waved, from costa to vein 1; antemedial line black defined on inner side by yellowish at costa and inner margin and white at middle, oblique and sinuous to median nervure, excurved in submedian interspace and bent inwards to inner margin, an

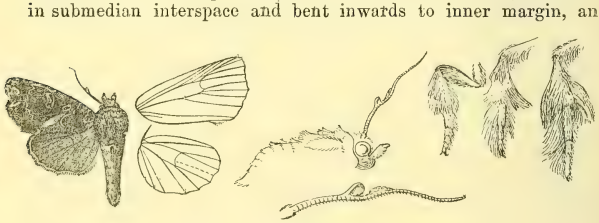


Fig. 115.—*Eriopus pryeri*, ♂. ½.

oblique yellowish fascia from it at submedian fold to postmedial line above inner margin; orbicular small with slight yellowish annulus, oblique elliptical, a slight whitish spot beyond it before the reniform, which is narrow and constricted at middle, defined on inner side by a straight rufous line and on outer by a curved line;

postmedial line blackish defined on outer side by yellowish white, strongly bent outwards below costa, then minutely waved, oblique below vein 4 and bent outwards to inner margin, some white points beyond it on costa; subterminal line white defined on inner side by some blackish marks in the interspaces, dentate at veins 8, 7, angled inwards at discal fold and outwards to termen at vein 4, then almost obsolete; a terminal series of small black lunules defined on inner side by white. Hind wing dark red-brown; cilia rufous; the underside greyish suffused and irrorated with red-brown, a faint sinuous medial shade from costa to lower angle of cell, postmedial line blackish, rather diffused, bent outwards below costa, then waved.

Hab. SINGAPORE (*Ridley*), 1 ♂; BORNEO, Sarawak (*Pryer*), 1 ♂ type, Kuching (*Shelford*), 1 ♂. *Exp.* 36 millim.

C. Antennæ of male with the angular projection at about one third of shaft with short scale-teeth beyond it; the tibiæ and 1st joint of mid and hind tarsi fringed with long hair.

a. Antennæ of male with the angular projection long and with slight tuft of hair from its extremity.

3400. Eriopus phæogona, n. sp.

Head, thorax, and abdomen ochreous white mixed with rufous. Fore wing ochreous white tinged with rufous and irrorated with brown, the veins slightly streaked with white; subbasal line represented by black striæ from costa and cell defined by white on outer side, an oblique white striga beyond them across the cell; antemedial line double, black filled in with white, angled outwards below

Fig. 116.—*Eriopus phæogona*, ♂. ½.

costa then strongly excurved, a short whitish streak before it in submedian fold, bent down to vein 1 at extremity; orbicular and reniform white defined by black and with black lines in centres, the former very narrow and oblique, the latter oblique and slightly angled inwards on median nervure; a black patch between them extending to costa; a diffused oblique red-brown shade from beyond lower angle of cell to inner margin; postmedial line double filled in with whitish, slightly angled inwards below costa, then strongly bent outwards, excurved to vein 5, then incurved and slightly sinuous below submedian fold, some white points with blackish streaks between them beyond it on costa; subterminal line whitish,

indistinct except towards costa, defined on inner side by black suffusion to vein 5, then slightly by brownish, angled inwards to postmedial line above vein 5 and with triangular black patch beyond it, angled outwards to termen at vein 4, then oblique to submedian fold when it is angled inwards; the apical area whitish; the termen blackish defined by a white line on inner side; cilia blackish mixed with ochreous. Hind wing whitish suffused with red-brown, a slight discoidal spot; cilia ochreous white; the underside white slightly irrorated with brown, a faint discoidal spot and indistinct postmedial line bent outwards below costa, then curved.

Hab. W. China, Omei-shan, 1 ♂ type, Moupin (*Krickeldorf*), 1 ♀. *Exp.*, ♂ 30, ♀ 32 millim.

b. Antennæ of male with the angular projection shorter, tufted with hair and with long curved bristles beyond it from shaft on upper- and undersides.

3401. Eriopus indica.

Cotanda indica, Butl. A. M. N. H. (6) viii. p. 76, pl. ix. f. 8 (1891); Hmpsn. Moths Ind. ii. p. 256.

Head and thorax ochreous tinged with rufous and mixed with black; antennæ with the basal half of shaft black above; tegulæ mostly black with slight whitish medial line; pectus white; legs pale rufous, the tarsi ringed with white; abdomen ochreous tinged with brown and with white segmental rings, the ventral surface white. Fore wing ochreous whitish tinged with rufous and irrorated with black, the basal area, costal half of medial area, and terminal area to vein 3 suffused with black, the veins with white streaks; a white mark at base of costa; subbasal line represented by double black striæ from costa and cell filled in with white; antemedial line double, black filled in with white and

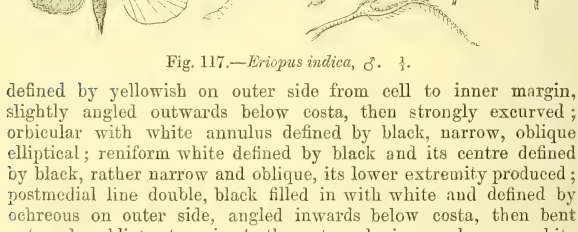


Fig. 117.—*Eriopus indica*, ♂. ½.

defined by yellowish on outer side from cell to inner margin, slightly angled outwards below costa, then strongly excurved; orbicular with white annulus defined by black, narrow, oblique elliptical; reniform white defined by black and its centre defined by black, rather narrow and oblique, its lower extremity produced; postmedial line double, black filled in with white and defined by ochreous on outer side, angled inwards below costa, then bent outwards, oblique to vein 4, then strongly incurved, some white striæ beyond it from costa; subterminal line white, oblique between veins 7, 6, angled inwards to postmedial line above vein 5, then

outwards to termen at vein 4, then slightly defined by blackish on inner side and angled inwards in submedian fold; a white line before termen, slight and waved below vein 4; cilia blackish with a fine white line at base and intersected with white at the veins. Hind wing brown with a cupreous tinge, the cilia white with a brown line through them; the underside white irrorated with brown especially on costal area, a brown discoidal lunule, curved post-medial line, and terminal series of slight lunules defined by whitish on inner side.

Hab. Punjab, Simla (*Harford*), 2 ♀, Dharmsála (*Hocking Dudgeon*), 3 ♂, 1 ♀ type; Assam, Khásis; Bombay, Kanara (*Ward*), 1 ♀. *Exp.* 28–30 millim.

c. (*Agabra*). Antennæ of male with the angular projection short and without long bristles beyond it.
  a^1. Fore wing with oblique white striga beyond lower angle of cell.
    a^2. Fore wing with the ground-colour dark red-brown — *æthiops.*
    b^2. Fore wing with the ground-colour bright rufous ... — *albistriga.*
  b^1. Fore wing without white striga beyond lower angle of cell.
    a^2. Fore wing with the antemedial line angled outwards in submedian fold ..... — *trilineata.*
    b^2. Fore wing with the antemedial line excurved from below costa ..... — *ferruginea.*

3402. Eriopus æthiops.

Callopistria æthiops, Butl. A. M. N. H. (5) i. p. 200 (1878); id. Ill. Het. B. M. iii. p. 21, pl. 46. f. 4; Hmpsn. Moths Ind. ii. p. 256.

Head and thorax greyish tinged with ochreous and mixed with dark brown; palpi whitish at base; tegulæ with double blackish medial line; pectus and legs whitish mixed with brown, the tarsi

Fig. 118.—*Eriopus æthiops*, ♂. ½.

ringed with white; abdomen grey tinged with rufous. Fore wing with the basal area yellowish irrorated with black, the rest of wing greyish suffused with fuscous brown, the veins with slight pale streaks; subbasal line whitish defined on each side by black scales, oblique from costa to submedian fold where it is met by an oblique whitish striga from subcostal nervure; antemedial line double, black filled in with white and defined by yellow on outer side, oblique from costa to submedian fold, then inwardly oblique and with oblique whitish striga before it from submedian fold to vein 1;

orbicular with white annulus defined by black, narrow, oblique elliptical; reniform with oblique white bar on inner side, curved yellowish line at middle with oblique white striga beyond its upper part and striga at lower extremity; a slight oblique dark shade from lower angle of cell to inner margin; postmedial line double, black filled in with white and with a whitish band on its outer side from vein 7 to inner margin with a brown line on it, angled inwards below costa, then strongly bent outwards, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line white, oblique between veins 7, 6, angled outwards to termen at vein 4, then almost obsolete except between veins 3 and 2 where it is oblique; a terminal series of blackish lunules defined on inner side by a white line; cilia dark brown with a white line at base. Hind wing whitish suffused with reddish brown; cilia white mixed with brown; the underside white irrorated with brown especially on costal area, a faint brown bar from middle of costa, discoidal lunule, diffused postmedial line bent outwards below costa, then waved, and some lunules on apical part of termen, defined by white on inner side.

Hab. Japan, Yokohama, (*Jonas*, *Pryer*), 1 ♂, 1 ♀ type, Hakone (*Leech*), 1 ♂; Corea, Gensan (*Leech*), 1 ♀; Madras, Nilgiris (*Hampson*), 1 ♂; Travancore, Pirmád (*Mrs. Imray*), 1 ♀. *Exp.* 30–34 millim.

3403. Eriopus albistriga, n. sp. (Plate CXX. fig. 29.)

Callopistria trilineata, Hmpsn. J. Bomb. Soc. xvii. p. 471 (nec Wlk.).

Head and thorax bright rufous mixed with whitish and some blackish scales; tegulæ with paired black bars at base followed by a whitish line; tarsi slightly ringed with whitish; abdomen white tinged with rufous, the crests rufous. Fore wing bright rufous, the veins slightly streaked with whitish; subbasal line brown defined by white on outer side, angled outwards on median nervure and ending at vein 1; antemedial line double, brown filled in with white and defined by white on outer side, slightly angled outwards below costa, then oblique to submedian fold where it is angled, then inwardly oblique to inner margin, an obliquely curved whitish streak before it from submedian fold to vein 1; orbicular white with red-brown centre, very narrow and oblique; reniform white with some rufous in centre and two blackish striæ in upper part, defined by blackish on inner side and upper part of outer side, oblique and angled inwards on median nervure, with a small white spot beyond lower angle of cell; postmedial line double, black filled in with white and with white band on outer edge from vein 6 to inner margin with slight red-brown line on it, angled inwards below costa, then bent outwards, incurved below vein 4, slightly excurved at vein 1 and bent outwards to inner margin, some white points beyond it on costa; subterminal line white, formed by oblique streaks above veins 7 and 6, angled inwards to postmedial line at vein 5, then

outwards to termen at vein 4, with an oblique striga between veins 3 and 2, then obsolescent and angled inwards in submedian fold; a terminal series of deep rufous lunules defined on inner side by a waved white line; cilia red-brown with a fine yellowish line at base. Hind wing white, the terminal area slightly suffused with brown; traces of a postmedial line; a terminal red-brown line defined by white on inner side; cilia white; the underside white, the costa tinged with rufous, the apical area irrorated with rufous, a rufous discoidal lunule, waved postmedial line, and terminal series of small lunules from apex to vein 2.

Hab. Ceylon, Pundaloya (*Green*), 1 ♂ type, Haldamulla (*Mackwood*), 1 ♀. *Exp.* 34 millim.

3404. Eriopus trilineata. (Plate CXX. fig. 30.)

Agabra trilineata, Wlk. Journ. Linn. Soc., Zool. vi. p. 137 (1862); Swinh. Cat. Het. Mus. Oxon. ii. p. 37. pl. 1. fig. 10.
Plusia duplicilinea, Wlk. Journ. Linn. Soc., Zool. vii. p. 70 (1864).

♂. Head and thorax rufous mixed with black and some whitish; frons with lateral white points with black bars above them; tegulæ with blackish medial line; pectus whitish; tarsi ringed with white; abdomen whitish tinged with rufous except on ventral surface. Fore wing violaceous grey, suffused with rufous and some blackish on costal area to subterminal line and on inner margin to middle, the veins streaked with whitish; subbasal line represented by an oblique pale striga from costa with an inwardly oblique white striga beyond it across the cell; antemedial line double filled in with white and defined by white on outer side except at costa, incurved in cell, angled outwards in submedian fold, then oblique to inner margin; a slight white striga before it in submedian fold with blackish patch below it; orbicular and reniform white defined by black, the former with brown striga in centre, small, narrow, oblique, the latter oblique, pointed below, with brown striga in upper part; an oblique blackish shade from lower angle of cell to inner margin; postmedial line double filled in with white and with a white band beyond it from vein 6 to inner margin with a fine brown line through it, angled inwards below costa, then bent outwards, excurved to vein 4, then incurved, some slight white points beyond it on costa; subterminal line white, defined on inner side by black-brown, oblique to postmedial line at vein 5 and very slightly angled outwards at vein 7, angled outwards to termen at vein 4, then incurved; a terminal series of red-brown lunules defined on inner side by a waved white line; cilia yellowish at base, red-brown at tips. Hind wing white tinged with brown; an indistinct curved postmedial line; cilia white; the underside white, the apical area irrorated with brown, a slight discoidal spot, rather diffused postmedial line bent outwards below costa, then slightly waved, and terminal series of slight brown lunules from apex to vein 2.

Hab. Singapore (*Ridley*), 2 ♂; Borneo, Sarawak (*Wallace*), 3 ♂. *Exp.* 32 millim. Type † and type † *duplicilinea* in Mus. Oxon.

3405. Eriopus ferruginea, n. sp. (Plate CXX. fig. 31.)

♀. Head and tegulæ bright rufous; thorax rufous mixed with brown and whitish; pectus whitish; tarsi slightly ringed with white; abdomen whitish tinged with brown, the crests rufous. Fore wing bright rufous, the inner margin and terminal area tinged with violaceous grey; subbasal line absent; antemedial line brown defined on each side by whitish, slightly angled outwards below costa, then excurved and somewhat sinuous; orbicular and reniform with rufous centres and white annuli slightly defined by brown, the former very narrow and oblique, the latter oblique and pointed at lower extremity; postmedial line double, brown filled in with violaceous grey and defined by violaceous grey on outer side from vein 4 to inner margin, bent outwards below costa and incurved below vein 4, some white points beyond it on costa; subterminal line defined by deep rufous on inner side, white and slightly oblique from costa to vein 6 and with oblique white streak between veins 5 and 4; the termen rufous with a faint pale waved line before it; cilia rufous with a fine whitish line at base. Hind wing whitish suffused with red-brown; cilia whitish; the underside white tinged and irrorated with rufous, a slight discoidal striga and indistinct rather diffused postmedial line.

Hab. Queensland, Brisbane (*Turner*), 1 ♀ type. *Exp.* 34 millim.

D. Antennæ of male without scale-teeth beyond the angular projection.
  a. Antennæ of male with the angular projection strong; the tibiæ and 1st joint of tarsi tufted with long hair.
    a^1. (*Cotanda*). Mid tibiæ of male with the spurs tufted with long hair.
      a^2. Fore wing with the orbicular nearly erect..... *placodoides*.
      b^2. Fore wing with orbicular very oblique, a dark triangular mark between it and reniform ..... *quadrinotata*.

3406. Eriopus placodoides.

Eriopus placodoides, Guen. Noct. ii. p. 296 (1852); Hampsn. Moths Ind. ii. p. 256.
Eriopus dolcschalli, Feld. Reis. Nov. pl. 110. f. 14. (1874).

Head and thorax red-brown; antennæ with the basal joint white in front; tarsi ringed with white; abdomen greyish suffused with red-brown and with slight whitish segmental rings. Fore wing red-brown tinged with violaceous grey especially on terminal area; subbasal line represented by a slight white striga from costa; antemedial line double, brown filled in with violaceous grey, nearly straight and erect to vein 1, bent inwards to inner margin; orbicular and reniform with violaceous-grey centres and whitish annuli defined at sides by brown lines, the former erect oblong, the latter oblique oblong with its centre defined by brown lines; an indistinct oblique brown line from lower angle of cell to inner margin; postmedial line double filled in with violaceous grey and with white striga at

costa, bent outwards and obsolescent below costa, slightly incurved at discal fold, incurved below vein 4, an indistinct dark line beyond it excurved at middle and some white points on costa; subterminal line white slightly defined by brown on outer side, incurved from costa to vein 4 where it is angled outwards, then incurved and below vein 3 almost obsolete and slightly waved; a terminal series

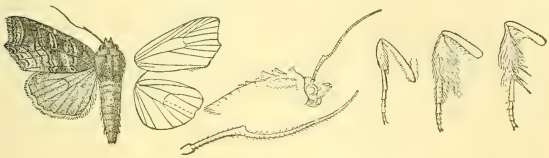


Fig. 119.—*Eriopus placodoides*, ♂. ½.

of rufous lunules defined on inner side by grey then by brown striæ; cilia dark red-brown. Hind wing whitish suffused with brown; cilia white with a brown line through them; the underside white slightly irrorated with brown, the costal area suffused with fiery-red, a brownish discoidal bar, diffused postmedial line bent outwards below costa, waved to vein 6, then oblique, and traces of a diffused subterminal band.

Hab. Sikhim, 1 ♀; Assam, Khásis, 1 ♂, Dibrugrah (*Ward*), 1 ♀; Madras, Nilgiris (*Hampson*), 2 ♀; Travancore, Pirmád (*Mrs. Imray*), 1 ♀; Malacca, Perak, Goping, (*Kunstler*), 1 ♂; Borneo, Baram (*Everett*), 1 ♂; Pulo Laut (*Doherty*), 1 ♀; Java (*Horsfield*), 2 ♂ type; Amboina, type † ♀ *doleschalli* in Coll. Rothschild. *Exp.* 28–36 millim.

*3407. Eriopus quadrinotata. (Plate CXX. fig. 32.)

Penicillaria quadrinotata, Wlk. Journ. Linn. Soc., Zool. vii. p. 65 (1864).

♂. Head and thorax whitish suffused with rufous; abdomen whitish tinged with rufous especially at extremity. Fore wing whitish suffused in parts with rufous especially on costal area; subbasal line diffused, rufous, from costa to submedian fold, with obliquely placed rufous marks beyond it in and below cell; antemedial line obsolete on costal half, faint, double and oblique from submedian fold to inner margin; orbicular and inner edge of reniform represented by oblique double red-brown lines filled in with white forming a V-shaped mark with red-brown patch between them extending to costa, the outer edge of reniform with oblique white striga beyond lower angle of cell; a rather diffused red-brown line from beyond lower angle of cell, oblique to submedian fold, then erect; postmedial line double, red-brown filled in with white, obsolescent towards costa, angled inwards below costa, then strongly bent outwards, then minutely waved, slightly incurved at discal fold, oblique

from vein 4 to submedian fold, then erect, some whitish points beyond it on costa; a quadrate red-brown patch from costa to vein 6 before the whitish subterminal line, which is diffused at apex, angled inwards in discal fold where there is a small triangular red-brown patch beyond it, then angled outwards to termen at vein 4 where it terminates; a red-brown terminal line defined by white on inner side from apex to vein 5 followed by red-brown striæ defined by white on inner side; cilia pale rufous with some red-brown at tips. Hind wing whitish suffused with red-brown; cilia white; the underside white tinged with rufous, a slight discoidal lunule, rather diffused postmedial line bent outwards below costa, then minutely waved and oblique below vein 6, a terminal series of minute lunules.

Hab. Borneo, Sarawak (*Wallace*), type † ♂ in Mus. Oxon, in bad condition. *Exp.* 30 millim.

b^1. (*Obana*). Mid tibiæ of male with the spurs not tufted with hair.

3408. **Eriopus pulchrilinea.**

Obana pulchrilinea, Wlk. Journ. Linn. Soc., Zool. vi. p. 190 (1862); Swinh. Cat. Het. Mus. Oxon. ii. p. 36.

Head and thorax yellowish tinged with rufous and mixed with black-brown; abdomen yellowish tinged with brown. Fore wing yellowish suffused with rufous and irrorated with black, the veins with slight pale streaks; subbasal line represented by pale striæ from costa and cell with an oblique striga beyond them across the cell; antemedial line double, black filled in with white and defined

Fig. 120.—*Eriopus pulchrilinea*, ♂. $\frac{8}{9}$.

by whitish on outer side except at costa, slightly angled outwards below costa, then strongly excurved, a double white streak before it defining the submedian fold for a short distance; orbicular represented by an oblique white striga across the cell connected by a white streak on median nervure with the reniform, which is whitish with a black line near inner edge, oblique, a black patch between them extending to costa, some blackish marks beyond it in the interspaces and a whitish striga beyond its lower extremity; an oblique blackish shade from lower angle of cell to inner margin; postmedial line double, black filled in with white, strongly bent

outwards below costa, oblique to vein 5, then incurved, some whitish points beyond it on costa; subterminal line white, defined on inner side by two dentate black marks below costa, then with blackish marks before and beyond it to vein 5, angled outwards at veins 7, 6 and to termen at vein 4, then incurved and almost obsolete; a terminal series of slight blackish marks defined on inner side by a white line; cilia yellowish at base, blackish at tips. Hind wing reddish brown; cilia yellowish with a slight brown line through them; the underside whitish tinged with ochreous and slightly irrorated with brown, a brown discoidal lunule, sinuous postmedial line, and terminal series of slight lunules from apex to vein 2.

Hab. Sarawak (*Wallace*), 2 ♂. *Exp.* 22 millim. Type † ♀ in Mus. Oxon.

b. Antennæ of male with the angular projection slight.

a[1]. (*Eriopus*). Antennæ of male with long bristles beyond the angular projection; fore and hind tibiæ of male and 1st joint of tarsi fringed with long hair, the mid tibiæ, inner spur and tarsus to near extremity with very large tufts of hair.

3409. Eriopus juventina.

Noctua juventina, Cram. Pap. Exot. iv. pl. 400. f. N (1782).
Noctua purpureofasciata, Piller, Sclav. Prov. Posega, p. 70, pl. vi. f. 2 (1783); Staud. Cat. Lep. pal. p. 183.
Noctua lagopus, Esp. Schmett. iv. pl. 125. f. 7 (1788).
Noctua pteridis, Fabr. Ent. Syst. p. 90 (1794); Hübn. Eur. Schmett., Noct. f. 65; Dup. Lép. Fr. vi. p. 324, pl. 93. ff. 1, 2; Frr. Neue Beitr. pls. 76 & 305.
Pyralis formosissimalis, Hübn. Eur. Schmett., Pyr. f. 111 (1798).
Callopistria obscura, Butl. A. M. N. H. (5) i. p. 200 (1878); id. Ill. Het. B. M. iii. p. 21, pl. 46. f. 3.

Head and thorax bright rufous mixed with yellowish white and some black scales; palpi blackish below; frons with paired black points above; antennæ of male with the basal part of shaft black at sides; tegulæ yellowish at base with black lines at and near base and yellowish tips; pectus and legs yellowish white mixed with some rufous, the legs irrorated with brown; abdomen yellowish white suffused with fuscous leaving pale segmental lines, the crests rufous tipped with black, the anal tuft tinged with rufous, the ventral surface yellowish white irrorated with black. Fore wing bright rufous irrorated with black, the veins streaked with yellowish white; subbasal line represented by a white striga from costa and oblique yellowish-white line from subcostal nervure to vein 1; antemedial line indistinct, double, blackish filled in with pink, defined on outer side by white at costa, then by pink, angled outwards below costa, then excurved, an oblique pinkish striga before it from submedian fold to vein 1; claviform represented by an oblique pinkish streak, acute and defined by black at extremity; orbicular with rufous centre and yellowish annulus defined by black, very narrow and oblique; reniform white slightly defined by black,

its centre ochreous defined by red-brown, produced at upper extremity and at lower extremity to a hook; a faint oblique waved black shade from lower angle of cell to inner margin; postmedial line double, black, the inner line strong, the outer slight, filled in with white towards costa, then with pink, defined on outer side by pink, angled inwards below costa, then bent outwards, slightly incurved at discal fold, incurved below vein 3, some white points beyond it on costa; subterminal line yellowish white, oblique to vein 7, where it is met by an oblique yellowish-white shade from apex, with oblique bar above vein 6, angled inwards to postmedial line above vein 5, then outwards to termen at vein 4, then slight, oblique to submedian fold and bent outwards to tornus; a

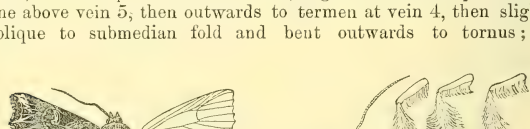


Fig. 121.—*Eriopus juventina*, ♂. ½.

yellowish-white line before termen, angled outwards at vein 4, then waved, cilia chequered white and black with a slight blackish line at base. Hind wing yellowish white suffused with fuscous brown except on costal area; a slight dark discoidal bar, pale postmedial line, and terminal series of dark lunules defined by whitish on inner side; cilia chequered brown and white; the underside white, the costal area tinged with ochreous and slightly irrorated with brown, the apical area tinged with pink, a black striga on upper discocellular, brown postmedial line bent outwards below costa, then slightly waved, incurved below vein 3, subterminal shade from costa to vein 5, and terminal series of small brown lunules.

Ab. 1. *obscura*. Head, thorax, and fore wing browner and less rufous with hardly any pink tinge.

Hab. France; Germany, Zeller & Leech Colls.; Austria, Frey Coll.; Hungary; Switzerland; Spain, Bilbao; Italy; Dalmatia; Russia, Urals; Armenia; Asia Minor, Pontus; Persia; E. Siberia, Amurland, Ussuri; Japan, Hakodaté (*Whitely*), 2 ♀ type *obscura*, Kiushiu, 1 ♂, Nikko (*Ito*), 1 ♂, Satsuma (*Leech*), 1 ♂, 1 ♀, Nagasaki (*Leech*), 1 ♂, 1 ♀, Tokio (*Maries*), 1 ♂, 1 ♀, Yokohama (*Pryer*), 1 ♂, Tsu-shima (*Holt*), 1 ♂; Corea, Fusan (*Leech*), 1 ♀, Gensan (*Ito*), 1 ♂; Centr. China, Shanghai, 1 ♀, Chusan Is. (*J. J. Walker*), 1 ♀, Ningpo, 1 ♀, Kiukiang (*Pratt*), 2 ♂; W. China, Chang-yang (*Pratt*), 1 ♂, 1 ♀, Omei-shan, 1 ♂, Tachien-lu (*Pratt*), 1 ♂; Assam, Khásis (*Badgley*), 1 ♀. *Exp.* 34–40 millim.

Larva. Kirby, Butt. & Moths Eur. p. 248; Hffmn. Raup. p. 100, pl. 28. f. 5.

Green with oblique yellow subdorsal stripes often strongly defined by pink; lateral line yellow often defined by pink below; warts slight, yellow; stigmata black; head reddish. Food-plant: *Pteris aquilina*. 8–6.

*b*¹. (*Hemipachycera*). Antennæ of male ciliated beyond the angular projection; tibiæ, 1st joint of tarsi, and inner spur of mid tibiæ fringed with long hair.

*a*². Fore wing with the orbicular oblique V-shaped.
*a*³. Fore wing with orange apical patch..... *xanthopera.*
*b*³. Fore wing without orange apical patch.
*a*⁴. Fore wing with the postmedial line nearly erect from below costa to vein 4 ..... *rivularis.*
*b*⁴. Fore wing with the postmedial line very oblique from below costa to vein 4 ..... *albolineola.*
*b*². Fore wing with the orbicular a minute annulus... *cyclopis.*

3410. **Eriopus xanthopera**, n. sp. (Plate CXXI. fig. 1.)

Head black mixed with some rufous and white scales; palpi rufous; tibiæ rufous in front; abdomen grey-brown with slight whitish segmental lines, the crests blackish, the anal tuft ochreous. Fore wing black slightly mixed with grey, the veins with fine ochreous streaks, some long rufous hair from base of inner margin; subbasal line white, slightly angled outwards below costa and ending at vein 1; antemedial line double, black filled in with ochreous, defined on outer side by a white striga from costa and slightly by grey below the cell, angled outwards below costa, then excurved, an oblique yellow striga before it from submedian fold to vein 1; orbicular with yellow annulus defined by black, oblique V-shaped; reniform with oblique white line on inner edge followed by a black line, then yellowish defined on outer side by an oblique white line and triangular spot at lower extremity; postmedial line double, black filled in with white, defined on outer side by a yellowish band with slight dark line on it from vein 6 to inner margin, slightly angled inwards below costa, then bent outwards, very slightly angled outwards at vein 6, incurved below vein 4 and slightly excurved at vein 1, some white points beyond it on costa; subterminal line white with an orange patch beyond it at apex and orange mark at vein 4, angled outwards at vein 7, very slight and angled inwards to postmedial line above vein 5, then forming a strong oblique striga to vein 4 near termen, then incurved and almost obsolete with white striga between veins 3 and 2 and slightly excurved at vein 1; a series of white striæ before termen; cilia blackish with a fine yellow line at base, wholly yellow at tornus, the scale-tooth whitish. Hind wing dark reddish brown; a slight discoidal lunule: cilia whitish with a brown line through them; the underside whitish thickly irrorated with brown, the

terminal area suffused with brown, a brown discoidal lunule, postmedial line bent outwards below costa, then waved, incurved below vein 4, a terminal series of small lunules defined by whitish on inner side from apex to vein 2.

Hab. Madras, Belgaum (*Watson*), 1 ♀, Shevaroys (*Campbell*), ♂; Travancore, Pirmád (*Imray*), 1 ♂ type; Ceylon, Maskeliya *Pole*), 1 ♀. *Exp.* 30–32 millim.

3411. Eriopus rivularis.

Callopistria rivularis, Wlk. xii. 867 (1857); Hmpsn. Moths Ind. ii. p. 255.

Head and thorax black mixed with some rufous; frons with lateral white points; tegulæ with yellow dorsal patch at extremity and some white scales at tips; abdomen dark brown with slight whitish segmental lines, the anal tuft ochreous, the ventral surface whitish at base. Fore wing greyish ochreous suffused and irrorated with black, the veins with pale streaks; subbasal line represented by whitish striæ from costa and cell; some black and white hairs from base of inner margin; antemedial line black slightly defined on each side by whitish, excurved below the cell and bent inwards to inner margin, a slight oblique pale striga before it from submedian fold to vein 1; orbicular with black centre and whitish annulus defined by black, oblique V-shaped; reniform with oblique white line on inner edge followed by a black line, then yellowish defined by a slight curved white line and a spot beyond lower

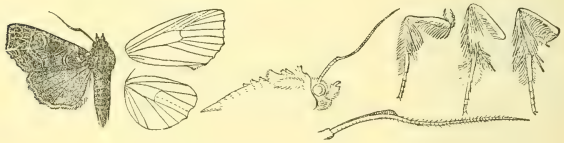


Fig. 122.—*Eriopus rivularis*, ♂. ½.

angle of cell, a black patch between them extending to costa; a faint diffused blackish shade from lower angle of cell to inner margin; postmedial line double, black filled in with white, slightly angled inwards below costa, then bent outwards, oblique to vein 5, then incurved, some white points beyond it on costa; subterminal line white with blackish suffusion before it in the interspaces, angled outwards at vein 7, inwards to postmedial line above vein 5, then outwards to termen at vein 4, then incurved and almost obsolete; a white line before termen to which it is angled outwards at vein 4, then waved and interrupted at the veins; cilia black with a fine yellowish line at base. Hind wing cupreous brown; cilia white, brownish at tips from apex to vein 2; the underside white

irrorated and suffused with brown, a slight brown discoidal spot and faint diffused postmedial line.

Ab. 1. Much redder.—Japan.

Hab. Japan, Yokohama, 1 ♀ in Coll. Püngeler; Punjab (*James*), 1 ♀ type, Simla (*Harford*), 1 ♂, 2 ♀, Dharmsála (*Hocking*), 1 ♂; Andamans, 1 ♂; Br. New Guinea, Aroa R., Mt. Kebea; Queensland, Kuranda. *Exp.* 26–32 millim.

3412. Eriopus albolineola. (Plate CXXI. fig. 2.)

Eriopus albolineola, Græs. Berl. ent. Zeit. 1888, p. 337; Staud. Cat. Lep. pal. p. 184.

Callopistria rivularis, Leech, Trans. Ent. Soc. 1900, p. 111 (part.), nec Wlk.

♀. Head and thorax dark brown with a reddish tinge and mixed with white; palpi white at base; antennæ with the basal joint white above; frons with lateral black bars; pectus and legs whitish tinged with brown, the tarsi ringed with white; abdomen whitish suffused with brown, the crests darker. Fore wing black-brown mixed with white and faintly tinged with reddish in parts, the veins with slight pale streaks; subbasal line represented by white points below costa and cell; antemedial line black defined by white on inner side and whitish on outer, slightly angled outwards below costa, then strongly excurved; orbicular an oblique whitish bar defined by black and slightly forking above; reniform ochreous white defined on inner side by pure white and black lines and with white spot at lower extremity; postmedial line black defined by white on outer side, bent outwards below costa, oblique to vein 5, then inwardly oblique to submedian fold and erect to inner margin; some white points beyond it on costa; subterminal line white defined on inner side by dentate black marks, angled outwards at veins 7, 6 and inwards in discal fold, then outwards to termen at veins 4, 3, inwards at submedian fold and ending on termen at vein 1; a series of black striæ just before termen defined on inner side by white striæ; cilia yellowish at base with brown medial line and chequered brown and white at tips. Hind wing dark brown with a greyish tinge; cilia white with some slight brown points; the underside white irrorated with brown, a brown discoidal bar, rather diffused minutely waved postmedial line, faint subterminal shade, and terminal series of slight lunules from apex to vein 2.

Hab. E. Siberia, Amurland, Pokrafka in Coll. Püngeler; Japan, Yokohama (*Pryer*), 2 ♀. *Exp.* 30 millim.

3413. Eriopus cyclopis, n. sp. (Plate CXXI. fig. 3.)

♂. Head and thorax red-brown mixed with whitish; abdomen whitish suffused with brown, the anal tuft pale rufous. Fore wing white almost wholly suffused and irrorated with red-brown; subbasal line white, angled inwards in cell and ending at vein 1, with dark brown patches before it below costa and cell and oblique white

striga beyond it across the cell; antemedial line double, red-brown filled in with white, angled outwards below costa, then curved, an oblique white striga before it from submedian fold to vein 1; orbicular with white annulus defined by brown, small, round; reniform with its centre defined by brown, and with white annulus except below and two white points at lower extremity, its upper extremity produced, slightly angled inwards on median nervure; a faint sinuous brown shade from beyond lower angle of cell to inner margin; postmedial line double, brown filled in with white, angled inwards below costa, then bent outwards, slightly angled inwards in discal fold, oblique and sinuous below vein 4, some white points beyond it on costa; subterminal line white defined on inner side by dark marks from costa to vein 4, formed by oblique bars from costa to vein 7 and between veins 7 and 6, then slight and angled inwards in discal fold, then strong and angled outwards to termen at vein 4, then formed of whitish lunules defined on each side by red-brown; a fine lunulate white line just before termen. Hind wing whitish suffused with red-brown; the underside whitish tinged with red-brown, a slight discoidal lunule, postmedial line bent outwards below costa, then crenulate, and terminal series of slight lunules from apex to vein 2.

Hab. Trobriand Is., Kiriwini (*Meek*), 1 ♂ type; D'Entrecasteaux Is., Fergusson I. (*Meek*), 1 ♀. *Exp.* ♂ 30, ♀ 36 millim.

Sect. III. Antennæ of male with the basal one-fifth thickened, then with large tufts of hair from upperside with some bristles beyond them, then with sinus with bristles beyond it from upper and underside; mid and hind tibiæ and the inner spurs fringed with long hairs on both sides, the tarsi fringed with long hairs on upperside to near extremity.

A. Fore wing with the antemedial line very oblique from below reniform, the orbicular narrow oblique V-shaped. *floridensis.*
B. Fore wing with the antemedial line erect below the cell, the orbicular oblique elliptical ..... *trinitensis.*

3414. Eriopus floridensis.

Eriopus floridensis, Guen. Noct. ii. p. 292 (1852); Smith, Cat. Noct. N. Am. p. 309.
Eriopus elegantulus, Herr.-Schäff. Corresp.-blatt. Zool. Min. Ver. Regens. 1868, p. 117.

♀. Head and thorax greyish tinged with rufous and mixed with a few black scales; palpi thickly irrorated with black; frons whitish with black bar above; antennæ with the extremity of basal joint, the basal part of shaft above and below, and the shaft above beyond the sinus black; tegulæ mostly black edged with grey, with angled grey line near base and grey line at middle; fore and mid tarsi black at extremities; abdomen ochreous tinged with fuscous, the basal crests rufous, the crest on 3rd segment black. Fore wing ochreous greyish tinged with rufous, the veins defined by slight

blackish streaks; subbasal line represented by double black striæ filled in with whitish from costa and cell and with double black striæ before it from cell; antemedial line double filled in with whitish, angled outwards below costa, acutely angled outwards on base of vein 2, then excurved, a whitish striga before it from submedian fold to vein 1; orbicular with brown centre and whitish annulus, very narrow and slightly angled outwards at median nervure; reniform whitish with white bar on inner edge followed by a brown line, oblique, its lower extremity produced to a hook, a triangular brown patch before it extending to costa; an oblique brown line from beyond lower angle of cell to vein 1, then bent outwards to inner margin; postmedial line double, brown, angled inwards below costa, then bent outwards, slightly incurved at discal fold, oblique below vein 4 and incurved at submedian fold; subterminal line whitish, defined on inner side by a triangular brown patch from costa to vein 6, angled inwards above vein 5, then outwards to termen at vein 4 and defined by an oblique blackish mark on inner side, then indistinct, oblique, waved, with a sinuous whitish line before it; the termen red-brown with white line before

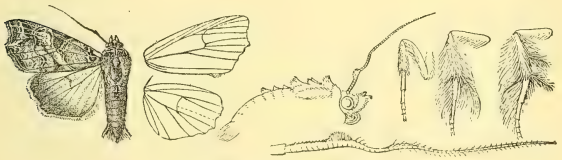


Fig. 123.—*Eriopus floridensis*, ♂. ½.

it slightly defined by black on inner side, incurved from vein 7 to 4 where it is angled outwards, then waved; cilia red-brown with yellowish line at base. Hind wing ochreous whitish tinged with red-brown especially on terminal area; a slight brown discoidal bar; cilia whitish; the underside whitish, the costal area tinged with ochreous and slightly irrorated with brown, a brown discoidal bar, postmedial line bent outwards below costa, then crenulate, traces of a diffused subterminal line, three small black spots on termen below apex defined by whitish on inner side.

♀. Ground-colour much darker red-brown.

Hab. U.S.A., Florida (*Doubleday*), 1 ♂ type; Mexico, Jalapa (*Trujillo*), 2 ♂; Guatemala, San Isidro (*Champion*), 1 ♂; Costa Rica, Candelaria Mts. (*Underwood*), 2 ♂, Godman-Salvin Coll.; Bahamas (*Bonhote*), 1 ♀; Jamaica (*Mrs. Swainson*), 1 ♀, Castleton (*Kaye*), 1 ♀; Cuba; Haiti (*Tweedie*), 1 ♂; Sta. Lucia (*Rotherham*), 1 ♂; St. Vincent (*H. H. Smith*), 2 ♀; Venezuela, 1 ♂; Br. Guiana, Omai, 1 ♂, Rockstone (*Kaye*), 1 ♂; Brazil, Organ Mts., Tijuca (*Wagner*), 2 ♀; S. Trinidad (*Meade-Waldo*), 4 ♂, 1 ♀. *Exp.* 30–38 millim.

Larva. Swainson, J. N.Y. Ent. Soc. viii. p. 33.

Dark velvety dark brown with pale cream-coloured subdorsal line; head reddish brown; the young larva is soft, green with a white lateral line; cocoon among leaves. Food-plant: Fern.

3415. **Eriopus trinitensis**, n. sp. (Plate CXXI. fig. 4.)

♀. Head and thorax chocolate red-brown; tegulæ with ochreous medial line; pectus ochreous; abdomen fuscous brown with slight ochreous segmental lines, the crests, anal tuft and ventral surface rufous. Fore wing ochreous almost entirely suffused with chocolate red-brown, the apical area slightly irrorated with whitish; subbasal line ochreous defined on outer side by red-brown, slightly bent outwards at subcostal nervure and ending at vein 1; antemedial line brown defined by ochreous on inner side, slightly excurved below costa and cell, a minute brown spot before it above vein 1; orbicular and reniform with whitish annuli defined at sides by brown, the former oblique elliptical, the latter oblique, narrow, constricted at middle, its inner edge straight, a truncate conical deep chocolate patch between them from costa; a faint oblique brown line from lower angle of cell to inner margin; postmedial line brown defined on outer side by ochreous, bent outwards below costa, excurved to vein 4, then incurved and outwardly oblique below submedian fold; subterminal line ochreous slightly defined on each side by brown, angled inwards at discal fold and incurved below vein 2, with an oblique ochreous streak from it at discal fold to termen at vein 4; the termen chocolate defined on inner side by a white line from below apex to vein 4, with triangular spots with white striæ on them below veins 4 and 3, and a wedge-shaped mark with a white line on its inner edge below 2; cilia chocolate-red. Hind wing red-brown with slight dark brown spots on termen; cilia white tinged with rufous; the underside whitish, the costal area suffused with rufous, a dark discoidal spot, minutely crenulate postmedial line, and some small lunules on termen from apex to vein 5.

Hab. Trinidad (*Kaye*), 1 ♀ type. *Exp.* 30 millim.

Sect. IV. Antennæ of male with the basal part of shaft slightly thickened, and without angular projection, downcurved at middle.

A. (*Rhoptrotrichia*). Antennæ of male with scale-teeth in curve at middle, with long cilia from them and a tuft of four long curved hairs from upperside; the tibiæ, spurs, and 1st joint of tarsi fringed with long hair.

a. Fore wing with the orbicular round with rufous centre; the reniform large, silvery white with rufous centre ..... *argyrosticta.*

b. Fore wing with the orbicular narrow oblique V-shaped; the reniform oblique with white striga beyond lower extremity ..... *maillardi.*

3416. Eriopus argyrosticta.

Perigea argyrosticta, Butl. Trans. Ent. Soc. 1881, p. 177; Staud. Cat. Lep. pal. p. 184.
Eriopus venus, Staud. Stett. ent. Zeit. 1888, p. 253; id. Rom. Mém. vi. p. 453, pl. 8. f. 6.
Eriopus argentata, Græser, Berl. ent. Zeit. 1888, p. 336.

♂. Head and thorax ferruginous red mixed with brown; abdomen pale red-brown with white segmental lines. Fore wing with the basal area ferruginous red except at inner margin, the rest of wing red-brown with a cupreous gloss; a whitish mark at base; subbasal line slight, whitish, angled at median nervure and ending at vein 1; antemedial line double filled in with pinkish and defined by pink on outer side except towards costa and inner margin, angled outwards below costa, then oblique and slightly sinuous, bent inwards to inner margin, an oblique silvery white bar before it from submedian fold to vein 1; orbicular ferruginous red, small, round; reniform very large, silvery white defined by black, with ferruginous-red centre defined by black below, strongly constricted at middle; postmedial line black defined by pink on outer side, bent outwards below costa, then very minutely waved, slightly incurved at discal fold, incurved below vein 4, some white points beyond it on costa; subterminal line whitish, angled inwards at discal and submedian folds. Hind wing red-brown with a cupreous gloss; the underside whitish slightly irrorated with brown, the costal area tinged with ferruginous yellow, indistinct diffused postmedial and subterminal lines.

Hab. E. Siberia, Amurland, Ussuri; Japan, Tokio (*Maries*), 1 ♂ type; Corea. *Exp.* 26 millim.

3417. Eriopus maillardi.

Eriopus maillardi, Guen. Maillard's Réunion, Lép. p. 39, pl. 22. f. 8 (1862).
Callopistria recurvata, Moore, Lep. Atk. p. 144 (1882); id. Lep. Ceyl. iii. p. 60, pl. 151. f. 1; Hmpsn. Nat. Hist. Sokotra, p. 324, pl. 20. f. 8; id. Moths Ind. ii. p. 257.

Head and thorax rufous mixed with some black and whitish scales; frons and vertex of head black mixed with white; tegulæ with paired black patches near base; tarsi slightly ringed with white; abdomen pale grey with white segmental rings, the crests rufous tipped with red-brown, the ventral surface whitish irrorated with fuscous and tinged with rufous at extremity. Fore wing rufous more or less tinged and irrorated with fuscous, the costal half of medial area and the apical area suffused with black, the veins streaked with whitish; some long black hairs from base of inner margin; a basal whitish striga from costa; subbasal line double, black filled in with whitish, angled inwards in cell and ending at submedian fold, an oblique whitish striga beyond it in cell; antemedial line double, black filled in with whitish and defined by whitish on outer side, oblique from costa to median nervure, then

inwardly oblique, a slight double whitish streak before it defining the submedian fold for a short distance, then oblique and single to vein 1; orbicular a fine whitish V-shaped mark; reniform with obliquely excurved white line on inner side followed by a black line, then a diffused oblique pinkish bar; a white striga beyond the cell between veins 5 and 3; a dentate blackish line from lower angle of cell to inner margin; postmedial line double, black filled in with white towards costa, then by pinkish and defined on each side by whitish below vein 4 with a slight brown shade on the outer side, angled inwards below costa, then bent outwards, excurved to vein 4, then incurved, a black line beyond it incurved below vein 2 and forming a black spot on inner margin and some white points on costa; subterminal line white, oblique between

Fig. 124.—*Eriopus maillardi*, ♂. ½.

veins 7, 6, angled inwards to postmedial line above vein 5, then outwards to termen at vein 4, inwards above vein 3, then incurved and slightly angled outwards at vein 1; a double black line filled in with white before termen, slightly excurved at middle; the termen chestnut with fine white terminal line; cilia black slightly intersected with white at the veins towards apex, strongly at vein 4; the scale-tooth before tornus formed of long white hair followed by black scales. Hind wing reddish brown with some whitish in the interspaces of basal half; cilia white with a dark brown line through them; the underside white irrorated with brown, a slight brown bar from middle of costa, brown discoidal lunule, postmedial line bent outwards below costa, then waved, a diffused maculate subterminal line and series of small brown lunules on termen from apex to vein 2 defined by whitish on inner side.

Hab. S. Leone (*Clements*), 1 ♂, 1 ♀, Bishops Court (*F. C. Smith*), 1 ♀; Congo, Ogowé R.; Sokotra, Adho Dimellus (*Grant*), 3 ♂, 2 ♀, Jena-Agahan (*Grant*), 1 ♀; Natal, Durban (*Leigh*), 1 ♀; Mauritius, Curepipe (*Tulloch*), 1 ♂, 1 ♀; Réunion; Hongkong (*J. J. Walker*), 1 ♂; Punjab, Jabbulpur (*F. Butler*), 1 ♂; Sikhim (*Dudgeon*), 1 ♂; Bengal, Calcutta, 1 ♂, type *recurvata*; Madras, Bangalore (*Watson*), 1 ♂; Ceylon, Kandy (*Yerbury, Templeton*), 2 ♂, 1 ♀, Pundaloya (*Green*), 1 ♂, 3 ♀, Dickoya (*Green*), 1 ♀; Java (*Horsfield*), 2 ♂; N. Guinea, Kapaur (*Doherty*), 1 ♂; Trobriand Is., Kiriwini (*Meek*), 2 ♂; New Hebrides (*Mathew*), 1 ♀; Fiji, 2 ♀; Samoa, Pago (*de la Garde*), 1 ♀. *Exp.* 30–40 millim.

B. Antennæ of male slightly thickened and minutely serrate at middle; the mid tibiæ, spurs, and 1st joint of tarsi fringed with long hair.

3418. Eriopus albomacula.

Callopistria albomacula, Leech, Trans. Ent. Soc. 1900, p. 111.

Head and thorax dark brown mixed with white and ochreous; palpi white at base and at base of 3rd joint; frons with whitish spots at sides; pectus and legs ochreous white mixed with red-brown; abdomen whitish suffused with brown and with slight white segmental lines, the crests reddish ochreous, the ventral surface whitish. Fore wing greyish suffused and irrorated with black-brown, the veins streaked with whitish; subbasal line whitish defined on each side by black, curved, from costa to submedian fold; antmedial line black defined on inner side by white and on outer by yellowish and rufous, angled outwards below costa, then strongly excurved and bent outwards to inner margin; orbicular with black centre and white annulus slightly defined by black, very narrow and oblique; reniform white, its centre tinged with brown and defined by black on inner side, its lower extremity produced to a hook; a faint diffused oblique blackish line from lower angle of cell to inner margin; postmedial line double, black filled in with white, angled inwards below costa, then bent outwards, excurved to vein 4, then incurved, some white points beyond it on

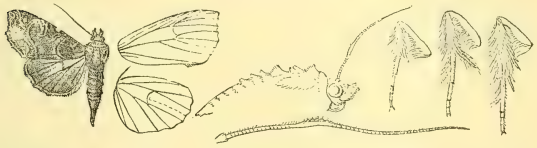


Fig. 125.—*Eriopus albomacula*, ♂. ½.

costa; subterminal line white, oblique between veins 7 and 6, angled inwards to postmedial line above vein 5, then outwards to termen at vein 4, then obsolescent, defined by black-brown marks on inner side, oblique to submedian fold and bent outwards to tornus, a terminal series of blackish lunules defined on inner side by a white line, angled outwards to termen at vein 4, then reduced to striæ; cilia black-brown with a reddish yellow line at base. Hind wing whitish suffused with red-brown; a terminal series of brown lunules faintly defined by whitish on inner side; cilia brown mixed with whitish; the underside whitish tinged with yellow and irrorated with brown, a brown discoidal bar and indistinct diffused waved postmedial line.

Hab. W. China, Chow-pin-sa, 1 ♂, Psu-tsu-fang, 1 ♀ type. *Exp.* 32 millim.

C. Antennæ of male with some long cilia from upperside at end of thickened portion; fore tibiæ and tarsal joints tufted with hair above; mid tibiæ and tarsus to extremity with thick fringes of very long hair, the inner spur very long and fringed with hair; hind femora with fringes of long blackish hair, the tibiæ, spurs, and 1st two tarsal joints above fringed with long hair.

*3419. Eriopus leucotoma.

Eriopus leucotoma, Druce, A. M. N. H. (8) i. p. 303 (1908).

♂. Head and thorax bright rufous; tegulæ with whitish medial line; pectus and legs pale rufous; abdomen dark brown with slight whitish segmental lines, the crests rufous, the anal tuft and ventral surface pale rufous. Fore wing pale rufous irrorated and suffused with deeper rufous, the veins with slight pale streaks; subbasal line represented by a curved whitish striga from costa and an oblique line from subcostal nervure beyond it to vein 1, defined by black on outer side in cell; antemedial line whitish slightly defined by rufous on outer side, nearly straight to vein 1 and bent inwards to inner margin, a slight black mark before it below costa, round brown spot in cell defined by whitish on inner side, and black bar from submedian fold to vein 1; orbicular rufous with slight

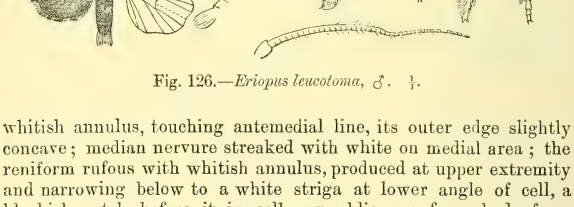


Fig. 126.—*Eriopus leucotoma*, ♂. ½.

whitish annulus, touching antemedial line, its outer edge slightly concave; median nervure streaked with white on medial area; the reniform rufous with whitish annulus, produced at upper extremity and narrowing below to a white striga at lower angle of cell, a blackish patch before it in cell; an oblique rufous shade from lower angle of cell to inner margin at antemedial line, some dark brown suffusion from it to termen and a black striga beyond lower angle of cell; postmedial line double, rufous filled in with whitish, bent outwards below costa, incurved at discal fold, oblique from vein 4 to submedian fold, then sinuous, some whitish points beyond it on costa; the apical area yellow irrorated with rufous extending before the antemedial white line to vein 4; subterminal line represented by a series of small red-brown lunules angled outwards below vein 7 and at vein 4, then oblique; a white line before termen defined by black on outer side, angled inwards below vein 6 and outwards to termen at vein 4, then reduced to a series of striæ; cilia yellowish at base, intersected with yellow at vein 4. Hind

wing dark brown with a reddish tinge; cilia rufous, yellowish at tips; the underside greyish thickly irrorated with red-brown, the inner area suffused with brown, a black discoidal lunule, postmedial line bent outwards below costa, then crenulate, a diffused subterminal shade, a terminal series of small black lunules from apex to vein 2.

Hab. Peru, S. Domingo (*Ockenden*), type † ♂ in Coll. Druce. *Exp.* 32 millim.

D. Antennæ of male without scale-teeth, serrations, or long cilia at middle.
  a. (*Hyperdasys*). Mid and hind tibiæ and 1st joint of tarsi of male with tufts of very long hair.
    a^1. Fore wing with the postmedial line distinct, double filled in with whitish.
      a^2. Fore wing with the reniform very oblique and slightly angled inwards on median nervure ..... *exotica.*
      b^2. Fore wing with the reniform less oblique, its lower extremity very slightly hooked on outer side ..... *duplicans.*
    b^1. Fore wing with the postmedial line dark and obsolescent ..... *cælisigna.*

3420. Eriopus exotica.

Eriopus exotica, Guen. Noct. ii. p. 294 (1852).

Head and thorax rufous tinged with purplish pink and mixed with some blackish; tarsi ringed with white; abdomen brown with whitish segmental rings, the crests bright rufous, the anal tuft and ventral surface pale rufous. Fore wing rufous tinged with purplish pink and suffused with black except on inner half of medial area; the veins of terminal area with orange streaks; subbasal line black defined by whitish on outer side, waved, from costa to vein 1; antemedial line double, black filled in with white and slightly defined

Fig. 127.—*Eriopus exotica.* ♂. ½.

by whitish on outer side from submedian fold to inner margin, angled outwards below costa, then strongly excurved and bent inwards to inner margin, with an oblique white striga before it from submedian fold to vein 1 with black patch below it; orbicular yellowish defined by black and with slight brownish centre, very small and oblique elliptical; reniform white with yellow centre defined by brown, oblique and rather narrow, with whitish above it on costa; an indistinct oblique dentate blackish line from beyond

lower angle of cell to inner margin; postmedial line double, black filled in with white, angled inwards below costa, then strongly bent outwards, incurved below vein 4, some whitish points beyond it on costa; subterminal line white, formed by three oblique streaks in the interspaces below apex with some yellow beyond it at apex, angled outwards to termen at vein 4 and with small lunule below vein 3; a series of white striæ just before termen; cilia brown with a yellowish line at base. Hind wing greyish suffused with red-brown; cilia white, brown at tips from apex to vein 2; the underside white slightly irrorated with brown, the costal area suffused with brown, a small discoidal spot, postmedial line bent outwards below costa, then waved, incurved below vein 4, and terminal series of small dark lunules defined by white on inner-side from apex to vein 5.

Hab. Singapore (*Ridley*), 9 ♂, 1 ♀; Borneo, Sarawak (*Shelford*), 1 ♀; Java (*Horsfield*), 3 ♂, 2 ♀ type. *Exp.* 28–32 millim.

3421. Eriopus duplicans. (Plate CXXI. fig. 5.)

Callopistria duplicans, Wlk. xii. p. 866 (1857); Hmpsn. Moths Ind. ii. p. 255.

Head and thorax rufous mixed with black and some ochreous; tegulæ mostly black with a rufous line at middle; tarsi ringed with white; abdomen grey-brown with pale segmental lines, the anal tuft ochreous. Fore wing ochreous tinged with purplish pink and suffused with black, the veins streaked with ochreous, some long ochreous and black hairs from base of inner margin; subbasal line double, black filled in with ochreous, waved, from costa to submedian fold, an oblique pale striga beyond it across the cell; antemedial line double, black filled in with ochreous and defined by ochreous on outer side, slightly angled outwards below costa, bent inwards to inner margin; orbicular with ochreous annulus defined by black, oblique V-shaped; reniform white with yellowish centre defined on inner side by black, oblique and rather narrow; postmedial line double, black filled in with ochreous and defined by rufous on outer side, angled inwards below costa, then bent outwards, slightly incurved at discal fold, incurved below vein 4 and bent outwards to inner margin, some white points beyond it on costa, subterminal line white with a yellow patch beyond it at apex, represented by oblique streaks above veins 7 and 6, angled inwards to postmedial line above vein 5, then almost obsolete and defined by black marks on the outer side, angled inwards in submedian fold; a fine very slightly sinuous white line just before termen; cilia with black line at base, then fuscous mixed with yellowish. Hind wing reddish brown; cilia ochreous white chequered with fuscous and with fine pale line at base from apex to vein 2; the underside whitish tinged with ochreous and irrorated with brown, the terminal area suffused with brown, a slight brown discoidal lunule, waved postmedial line, and some slight whitish lunules before termen from apex to vein 5.

Hab. Japan, Nagasaki (*Leech*), 1 ♂, Satsuma (*Leech*), 1 ♂, 1 ♀,

Yokohama (*Pryer*), 1 ♂; Corea, Gensan (*Leech*), 1 ♂; C. China, Shanghai, 2 ♂, Ningpo, 1 ♂, Kiukiang (*Pratt*), 1 ♀; W. China, Ta-chien-lu (*Pratt*); Sikhim (*Dudgeon*), 1 ♂; Formosa (*Hobson*), 1 ♀; Assam, Khásis, 2 ♂; Bombay, Kanara, Karwar (*Bell*), 1 ♂, 1 ♀; Burma, Moulmein (*Clerk*), 1 ♂ type. *Exp.* 30–32 millim.

3422. Eriopus cœlisigna. (Plate CXXI. fig. 6.)

Callopistria cœlisigna, Hmpsn. J. Bomb. Soc. xiv. p. 204 (1902).

Head and thorax dark red-brown mixed with greyish; pectus and legs with some ochreous; abdomen greyish mixed with red-brown. Fore wing greyish ochreous, almost entirely suffused with red-brown and with slight blackish irroration; subbasal line slight, blackish, waved, from costa to vein 1; antemedial line blackish defined on inner side by greyish, curved and slightly waved; orbicular a small ill-defined ochreous-white spot; reniform white with yellowish centre slightly defined by blackish on inner side, oblique, narrow, a rather diffused oblique black line from lower angle of cell to inner margin; postmedial line reddish ochreous towards costa, angled inwards below costa, then bent outwards, then hardly traceable, double filled in with greyish, oblique to vein 4, then incurved; subterminal line yellowish white tinged with rufous, formed by oblique streaks above veins 7 and 6, angled outwards to termen at vein 4, oblique to submedian fold and bent outwards to tornus; cilia red-brown with yellowish line at base. Hind wing greyish suffused with red-brown: cilia yellowish tinged with rufous; the underside yellowish white tinged with rufous and irrorated with brown especially on costal area, a brown discoidal lunule and indistinct minutely waved postmedial line.

Hab. Ceylon, Labugama (*Markwood*), 1 ♀ type, Galboda (*Green*), 1 ♀, Maskeliya (*Alston*), 2 ♂. *Exp.* 30–34 millim.

b. Mid and hind tibiæ of male fringed with long hair, the mid tarsi with tufts of long hair at base and near extremity, the hind femora fringed with very long black hair.

3423. Eriopus insularis.

Callopistria insularis, Butl. A. M. N. H. (5) x. p. 230 (1882).

♂. Head and thorax ochreous white mixed with pale olive-brown; palpi with slight brown band at middle of 2nd joint; antennæ with the ridge of scales black; pectus and legs ochreous white mixed with red-brown, the fringe of hair on hind femora and tuft of scales near extremity of mid tarsi black; abdomen ochreous white tinged with brown leaving slight whitish segmental lines; the ventral surface white with a series of black points. Fore wing ochreous white suffused in parts with pale olive-brown; subbasal line represented by slight dark striæ from costa and cell defined by white on outer side; antemedial line slight, brown defined by white on inner side and with some blackish beyond it at costa, slightly angled outwards below costa, oblique to vein 1, then bent inwards to inner

margin, an oblique whitish striga before it from submedian fold to vein 1; orbicular whitish with blackish centre, rather oblique V-shaped; reniform white defined at sides by black, oblique, triangular, some black suffusion before it in cell, a short black streak with white point on it beyond lower angle of cell; a rather diffused oblique brownish line from lower angle of cell to inner margin; postmedial line black defined by whitish on outer side,

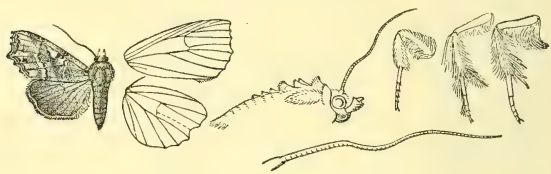


Fig. 128.—*Eriopus insularis*, ♂. ½.

strongly bent outwards below costa, oblique to vein 4, then incurved and slightly waved, some white points beyond it on costa on a triangular blackish patch before the subterminal line, which is whitish and hardly traceable, angled outwards to termen at vein 4 below which there is a small triangular black spot; a terminal series of brown lunules defined on inner side by a waved white line; cilia white with a waved black line through them and series of black spots at tips. Hind wing whitish suffused with brown; cilia ochreous white; the underside white, the costal area irrorated with brown, a brown discoidal lunule, waved postmedial line, and traces of diffused subterminal band.

Hab. Duke of York I., 1 ♂ type. *Exp.* 30 millim.

c. (*Dissolophus*). Mid tibiæ of male and tarsus to near extremity fringed with very long hair, the hind femora with fringe of long blackish hair, the tibiæ fringed with long hair.
  *a*¹. Fore wing with the postmedial line entire, double filled in with whitish ..... *reticulata.*
  *b*¹. Fore wing with the postmedial line reduced to white lunules with slight black lunules on their inner side... *chloriza.*

3424. Eriopus reticulata.

Eriopus reticulata, Pag. JB. Nass. Ver. xxxvii. p. 226, pl. vi. f. 7 (1884).
Callopistria rivularis, Hmpsn. Ill. Het. B. M. ix. p. 103, pl. 163. f. 2 (nec Wlk.).

♂. Head and thorax reddish brown mixed with whitish; frons with lateral white points with black points above and below them; tarsi ringed with white, the fringe of hair from hind femora of male black; abdomen grey suffused with brown and with whitish segmental lines, the crest on 3rd segment tipped with black. Fore wing yellowish white suffused with red-brown and irrorated with

black, the veins with whitish streaks; subbasal line whitish, curved, from costa to submedian fold; antemedial line double, black filled in with white, slightly angled outwards below costa, then strongly excurved, an oblique whitish striga before it from submedian fold to vein 1; orbicular with black centre and whitish annulus slightly defined by black, oblique V-shaped; reniform white, its centre defined by black, more strongly on inner side, oblique, its upper extremity produced, narrowing below, a white striga beyond lower angle of cell, a black patch before it extending to costa; an oblique fuscous shade from lower angle of cell to inner margin; postmedial line double, black filled in with whitish and defined by

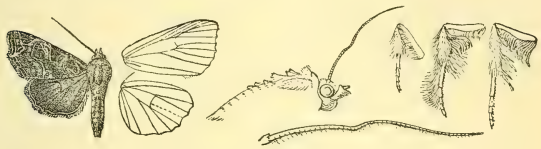


Fig. 129.—*Eriopus reticulata*, ♂. ½.

grey on outer side, angled inwards below costa, then bent outwards, strongly incurved below vein 4, some white points beyond it on costa; subterminal line white, angled inwards to postmedial line above vein 5, then outwards to termen at vein 4, then almost obsolete, incurved and with oblique white striga between veins 3 and 2; the termen black-brown defined on inner side by a fine white line, angled outwards to termen at vein 4, then reduced to striæ; cilia black-brown with a yellowish line at base. Hind wing whitish suffused with brown; cilia white tinged with rufous; the underside white irrorated with brown, a slight discoidal bar and indistinct waved postmedial line.

Ab. 1. Fore wing with the ante- and postmedial lines defined by pink on outer side.—New Hebrides.

♀. Much darker.

Hab. Sikhim (*Dudgeon*), 4 ♂, 2 ♀; Travancore, Pirmád (*Mrs. Imray*), 2 ♂; Ceylon, Maskeliya (*Alston*), 2 ♀, Uva; Burma, Hsipaw (*de Nicéville*), 1 ♂, Myingyan (*Watson*), 1 ♀; Singapore (*Ridley*), 1 ♂; Borneo, Sarawak, Matang (*Shelford*), 1 ♂; Pulo Laut (*Doherty*), 2 ♂; Nias I.; Java (*Horsfield*), 2 ♂; Amboina; New Hebrides (*Mathew*), 1 ♂; Solomons, Alu (*Woodford*), 1 ♂; Fiji (*Mathew*), 1 ♀. *Exp.* 26–28 millim.

3425. Eriopus chloriza. (Plate CXXI. fig. 7.)

Eriopus chloriza, Guen. Noct. ii. p. 296 (1852).

♂. Head and thorax olive-yellow; palpi blackish at sides; frons with lateral black spots; antennæ black at base; tegulæ with black line near base; pectus and hind legs whitish tinged with

brown; abdomen pale rufous, the basal crest olive-yellow, the other crests with some black scales. Fore wing olive-yellow; subbasal line whitish defined on each side by blackish, waved, from costa to submedian fold, an oblique pale striga beyond it across the cell; antemedial line whitish, bent inwards at subcostal nervure, then oblique to vein 1 and bent inwards to inner margin, some black suffusion before it in cell and submedian interspace and a curved white striga from submedian fold to vein 1: claviform represented by a whitish mark with black bar at base; orbicular with black centre and yellowish annulus defined by black, oblique V-shaped; reniform yellowish defined by black and with small wedge-shaped black mark in upper part, slightly angled inwards on median nervure, its upper extremity rather produced and its lower extremity with oblique white striga below it, some black suffusion before, beyond and below it and on costa above orbicular; postmedial line with white striga from costa, bent outwards and almost obsolete below costa, then represented by white lunules defined on inner side by black lunules and slightly by black on outer side, oblique to vein 4, inwardly oblique to submedian fold and bent outwards to inner margin, some whitish points beyond it on costa with black between them; subterminal line represented by a series of white bars defined on inner side by a black patch to vein 6, then by black bars, angled inwards in discal fold, then outwards to termen at vein 4, below which there is a small triangular black spot, then oblique to submedian fold and bent outwards to tornus; a terminal series of rather quadrate black spots defined on inner side by white lunules; cilia yellowish white intersected with black. Hind wing whitish, the veins and terminal area broadly suffused with reddish brown; cilia white chequered with brown from apex to vein 2; the underside white, the costal area irrorated with fuscous, a fuscous discoidal bar, crenulate postmedial line, and diffused subterminal band.

Hab. Java (*Horsfield*), 1 ♂ type. *Exp.* 32 millim.

d. Fore femora of male with tuft of hair at extremity, the mid tibiæ above and spurs fringed with long hair, the hind femora with fringe of long blackish hair, the tibiæ with the inner spurs and the tibia between them fringed with long hair.

3426. Ericpus yerburi.

Callopistria yerburii, Butl. P. Z. S. 1884, p. 496; Hmpsn. Moths Ind, ii, p. 255.

Head and thorax grey tinged with brown and mixed with black; palpi white at base; frons with the lower part white and with black lateral bars; tegulæ black at base and with slight white medial line; pectus white; legs white mixed with brown, the tarsi black ringed with white; abdomen grey suffused with fuscous and with whitish segmental lines, the crests tinged with rufous and tipped with black, the ventral surface white with series of small

black spots. Fore wing whitish tinged with ochreous and rufous and mostly suffused and irrorated with black; subbasal line represented by double oblique black striæ from costa and cell, with an oblique pale striga beyond them across the cell; antemedial line double, black filled in with yellowish white and defined by yellowish on outer side from cell to inner margin, very slightly angled outwards below costa, then strongly excurved and with some blackish marks before it from cell to inner margin; orbicular with black centre and yellowish-white annulus, oblique V-shaped; reniform yellowish white, its centre defined by black on inner side, angled inwards on median nervure, its lower extremity produced and with brown mark in it, a black patch between them extending to costa; an excurved somewhat dentate blackish shade from lower angle of cell to inner margin; postmedial line double, black filled in with white, angled inwards below costa, then bent outwards, oblique to

Fig. 130.—*Eriopus yerburi*, ♂. ½.

vein 4, then strongly incurved and bent outwards to inner margin, some white points beyond it on costa; subterminal line white with yellowish-white patch beyond it at apex, angled inwards to postmedial line above vein 5, then outwards to termen at vein 4, below which there is a small triangular black spot, then almost obsolete and defined by blackish suffusion on inner side, oblique to submedian fold and bent outwards to tornus; a fine white line before termen, slightly sinuous below vein 4; cilia white with a black line through them, chequered with fuscous at tips. Hind wing whitish suffused with reddish brown; cilia white with a slight brown line through them from apex to vein 2; the underside yellowish white, the costal area irrorated with brown, a slight brown discoidal lunule, indistinct irregularly waved postmedial line, and terminal series of brown lunules from apex to vein 2.

Hab. Eritrea, Massowah (*Barker*), 2 ♂, 1 ♀; Red Sea, Zebaur Is. (*J. J. Walker*), 1 ♀; Aden (*J. J. Walker*, *Yerbury*), 3 ♂, 3 ♀, type; Madras, Nilgiris (*Hampson*), 2 ♂, 1 ♀; Ceylon, Uva. *Exp.* 26–32 millim.

e. Mid and hind tibiæ of male moderately fringed with long hair on inner side.

3427. **Eriopus occidens**, n. sp.

♂. Head and thorax rufous mixed with yellowish white; abdomen whitish tinged with rufous and irrorated with dark brown.

Fore wing golden yellow largely suffused with rufous and slightly irrorated with fuscous; subbasal line slight, brown, waved, from costa to vein 1; antemedial line slight, double, brown filled in with white, angled inwards in cell, then excurved; orbicular with brown centre and yellowish annulus defined by brown, oblique V-shaped; reniform yellowish white, somewhat triangular and with white point beyond its lower extremity, a red-brown patch before it extending to costa, an oblique red-brown shade from lower angle of cell to inner margin; postmedial line double, brown filled in with

Fig. 131.—*Eriopus occidens*, ♂. $\frac{3}{2}$.

whitish, slightly angled inwards below costa, then bent outwards, then very minutely waved, oblique to vein 4, then inwardly oblique and sinuous, some yellow points beyond it on costa; subterminal line hardly traceable, yellow, oblique from costa to vein 5, angled outward to termen at vein 4, below which there is a small triangular dark brown spot, then represented by some faint lunules; a terminal series of small dark red-brown striæ with white striæ before them; cilia reddish yellow with brown line near tips which are whitish. Hind wing dark brown; cilia whitish with a brown line through them; the underside white irrorated with brown, a brown discoidal spot, crenulate postmedial line, and terminal series of small lunules from apex to vein 2.

Hab. Nigeria, Old Calabar (*Crompton*), 1 ♂ type. *Exp.* 24 millim.

Sect. V. Antennæ of male sinuous at middle but not thickened, and without ridge of scales.

A. Fore tibiæ of male and 1st joint of tarsi with large tufts of hair, mid tibiæ with very large tufts of hair, the inner spurs fringed with long hair, the 1st joint of tarsi with very large tufts of hair above and below, the terminal joints with tufts above; hind femora with fringe of long blackish hair, the tibiæ and 1st joint of tarsi fringed with long hair.

3428. **Eriopus repleta.**

Callopistria repleta, Wlk. xii. 865 (1857); Hmpsn. Moths Ind. ii. p. 255.

Head and thorax ochreous white mixed with rufous and black; frons and vertex of head with black patches; tegulæ with black line near base followed by a slight white line, then by black patches;

patagia with black spots at base ; vertex of thorax mostly black ; pectus black in front ; tarsi ringed with white, the fringes of hair from hind femora of male blackish ; abdomen whitish dorsally suffused with brown leaving pale segmental lines, the crests rufous and black, the anal tuft ochreous, the ventral surface ochreous irrorated with black and white at middle. Fore wing rufous irrorated with black especially on medial area, the veins streaked with white and defined by fine black streaks ; some long black and yellowish hair from base of inner margin ; subbasal line yellowish white, excurved at median nervure, from costa to vein 1 ; antemedial line black defined on each side by yellowish white, slightly bent inwards at subcostal nervure, obliquely excurved to vein 1 and bent inwards to inner margin, an oblique pale striga before it from

Fig. 132.—*Eriopus repleta*, ♂. ½.

submedian fold to vein 1 ; orbicular with very oblique parallel yellowish white lines at sides defined by black ; reniform yellowish white defined at sides by black and with fine whitish line in middle defined by rufous and rufous patch below, very oblique, a black patch before it extending to costa ; a diffused black shade from beyond lower angle of cell where there is a slight white striga on it, angled inwards in submedian fold ; postmedial line double, black filled in with yellowish white, white at costa, angled inwards below costa, then bent outwards, inwardly oblique to below vein 3, then slightly incurved, a slight whitish line beyond it from vein 6 to inner margin and some white striæ from costa on a black patch ; subterminal line represented by oblique white streaks above veins 7 and 6 and an oblique streak to termen at vein 4, then by an incurved series of slight black marks in the interspaces ; a fine waved white line defined on each side by black before termen, angled outward at vein 7 and excurved at middle ; cilia blackish with a fine yellow line at base ; the scale-tooth before tornus whitish and black. Hind wing whitish suffused with brown except costal area ; cilia yellowish white ; the underside yellowish white, the costal and terminal areas irrorated with brown, a slight brown discoidal lunule, waved postmedial line excurved at middle, and two rufous lunules on termen defined by white on inner side.

Hab. E. Siberia, Amurland, in Coll. Püngeler ; Japan, Osaka (*Lewis*), 1 ♂, Yokohama (*Pryer*), 1 ♂ ; Corea, Gensan (*Leech*),

1 ♂; W. China, Omei-shan, 1 ♂, Chia-kou-ho (*Pratt*), 1 ♂, Washan (*Pratt*), 1 ♂, Chang-yang (*Pratt*), 1 ♂; Punjab, 1 ♀ type, Murree (*Harford*), 1 ♂, Dalhousie (*Harford*), 1 ♂, Dharmsála (*Hocking*), 1 ♂, 3 ♀; Assam, Khásis (*Atkinson*, *Badgley*), 1 ♂, 2 ♀. *Exp.* 34–40 millim.

B. Mid tibiæ of male and 1st joint of tarsi above and hind tibiæ below fringed with long hair.

3429. Eriopus mexicana.

Callopistria mexicana, Druce, Biol. Centr.-Am., Het. i. p. 323, pl. 30. f. 1 (1889).

Head, thorax, and abdomen bright rufous; pectus yellowish white; tarsi slightly ringed with white; ventral surface of abdomen fulvous yellow. Fore wing bright rufous; subbasal line represented by a whitish striga from costa and oblique whitish line from subcostal nervure to vein 1; antemedial line whitish defined by red-brown on outer side, excurved from costa to median nervure and from median nervure further from base to inner margin, some grey suffusion with a blackish spot on it before it on inner area;

Fig. 133.—*Eriopus mexicana*, ♂. ½.

orbicular represented by a whitish striga defined by black, bent inwards at lower extremity; reniform with sinuous silvery bar defined by black on inner side, slightly expanding below, oblique silvery striga on upper part of outer edge and silvery point at lower extremity, both defined by black on outer side; a rufous medial shade, oblique from costa to lower angle of cell, then inwardly oblique to inner margin at postmedial line; postmedial line double filled in with violaceous grey, bent outwards below costa, somewhat inwardly oblique to vein 4, angled inwards at vein 2, then somewhat excurved, some slight striæ beyond it from costa; two red-brown subterminal lines slightly incurved at discal and submedian folds, the area beyond the outer line violaceous grey; a violaceous-white line defined by black on outer side before termen, incurved to vein 4 where it is angled outwards, then lunulate, some violaceous white suffusion before it between veins 7 and 5. Hind wing deep red-brown; cilia white at tips; the underside whitish tinged with rufous, the costal area irrorated with red-brown, the terminal area suffused with red-brown from vein 5 to inner margin,

a blackish discoidal lunule, postmedial line bent outwards below costa, then crenulate, some small black lunules on termen from apex to vein 5.

Hab. Mexico, Teapa, Tabasco (*H. H. Smith*), 1 ♂, 1 ♀, type Godman-Salvin Coll. *Exp.* 28 millim.

C. (*Gnamptocera*). Tibiæ of male normally fringed with hair; fore wing with the termen slightly angled at vein 4.
  a. Fore wing with the medial area yellow, the veins streaked with yellow ..... *minuta.*
  b. Fore wing with the medial area rufous, the veins streaked with rufous ..... *minor.*

3430. Eriopus minuta.

Callopistria minuta, Butl. Ill. Het. B. M. vii. p. 70, pl. 130. f. 4 (1889); Hmpsn. Moths Ind. ii. p. 254.

Head and thorax yellowish tinged with rufous, the tegulæ and vertex of thorax mixed with black-brown; palpi dark at base; antennæ dark brown; pectus and legs yellow mixed with some brown; abdomen greyish with brown bands, suffused with black at middle, the crests tipped with black, the ventral surface yellow at extremity. Fore wing black-brown, the medial area below and beyond the cell yellow, the veins and base of submedial fold finely streaked with yellowish white; some yellow at base of costa; subbasal line represented by a yellowish striga from costa, oblique

Fig. 134.—*Eriopus minuta*, ♂. $\frac{2}{3}$.

striga from cell to vein 1 and striga beyond it across the cell; antemedial line black defined on each side by yellowish white, obliquely excurved from costa to vein 1 and bent inwards to inner margin; orbicular and reniform defined by yellowish white, the former very narrow and oblique, the latter narrow, its upper extremity produced and with fine yellow line in centre; postmedial line black defined on outer side by yellowish white, slightly angled inwards below costa, then bent outwards, excurved to vein 4, then incurved, some whitish striæ beyond it from costa; subterminal line yellowish white, angled outwards at vein 7, inwards to postmedial line at discal and submedian folds and outwards to termen at veins 4, 3;

a fine white line just before termen slightly excurved at middle; cilia black with a fine white line at base. Hind wing whitish suffused with fuscous brown; cilia with a fine white line at base; the underside white irrorated with fuscous especially on costal area, a blackish discoidal bar, sinuous postmedial line, and indistinct subterminal shade.

Hab. PUNJAB, Simla (*Harford*), 1 ♂, 3 ♀, Dharmsála (*Hocking*), 2 ♂, 1 ♀ type. *Exp.* 20–22 millim.

3431. Eriopus minor.

Callopistria minor, Hmpsn. Ill. Het. B. M. viii. p. 81, pl. 146. ff. 16, 17 (1891); id. Moths Ind. ii. p. 254.

♂. Head and thorax rufous mixed with some black especially on tegulæ and vertex of thorax, the tegulæ with black lines near base and at middle; tarsi black ringed with white; abdomen greyish fuscous with whitish segmental lines, the base, extremity and ventral surface ochreous, the crests blackish. Fore wing pale rufous irrorated with black, the medial area more rufous, the postmedial area strongly suffused with black, the terminal area less strongly, the veins finely streaked with rufous; subbasal line double, black filled in with whitish, angled outwards on median nervure and ending at vein 1; antemedial line black defined on inner side by whitish, bent inwards at subcostal nervure, oblique to vein 1 and bent inwards to inner margin; orbicular represented by an oblique black bar defined on each side by whitish; reniform with whitish striga in centre and yellowish-white annulus, angled inwards on median nervure and with oblique white striga defined on inner side by black at lower extremity, a conical black patch before it extending to costa; postmedial line black defined on outer side by whitish, slightly angled inwards below costa, then bent outwards, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line represented by a series of bluish white striæ, oblique above veins 7 and 6, angled inwards to near postmedial line at discal and submedian folds and outwards to near termen at veins 4, 3; a fine white line just before termen slightly excurved at middle; cilia black with a fine yellow line at base. Hind wing black-brown; a fine yellow line at base of cilia; the underside whitish tinged and thickly irrorated with fuscous, a fuscous discoidal lunule, curved postmedial line, indistinct subterminal shade, and terminal series of slight lunules.

♀. Fore wing with the medial area darker.

Hab. MADRAS, Belgaum (*Watson*), 1 ♀, Nilgiris (*Hampson*), 1 ♂, 1 ♀ type; TRAVANCORE, Pirmád (*Mrs. Imray*), 3 ♂, 1 ♀. *Exp.* 20–24 millim.

Sect. VI. Antennæ of male simple and ciliated.

A. Fore wing with the termen distinctly angled at vein 4.

a. Mid tibiæ of male and 1st joint of tarsi with tufts of long hair; hind femora with fringe of long blackish hair, the tibiæ moderately fringed with long hair.

3432. Eriopus natalensis, n. sp.

♂. Head and thorax red-brown mixed with ochreous white; antennæ ringed with black; tegulæ with black spots at base and middle; tarsi black ringed with white, the fringe of hair from hind femora blackish; abdomen rufous dorsally irrorated with black at middle, the crests black, the anal tuft blackish above. Fore wing yellowish white, mostly suffused with rufous and irrorated with black, the veins slightly streaked with whitish; subbasal line whitish, waved, from costa to submedian fold, with an oblique whitish striga beyond it across the cell; antemedial line black defined on each side by white, angled outwards below costa, then strongly excurved and bent inwards to inner margin, an oblique pale striga before it from submedian fold to vein 1; orbicular with black centre and whitish annulus defined by black, very small and oblique elliptical; reniform whitish defined at sides by black and

Fig. 135.—*Eriopus natalensis*, ♂. ½.

with slight black line near inner edge, oblique, pointed below and with white striga defined on outer side by black beyond lower angle of cell, a blackish patch before it extending to costa; an oblique brown shade from lower angle of cell to inner margin; postmedial line double, black filled in with yellowish white, angled inwards below costa, then bent outwards, oblique to vein 4, then inwardly oblique to submedian fold, a slight whitish line beyond it and some white striæ from costa; subterminal line indistinct, whitish defined on inner side by a triangular black patch on costa, then by slight blackish lunules, a black point beyond it below costa on a large apical white patch extending to vein 4 where the line is angled outwards to termen, then incurved and represented by slight whitish lunules; a terminal series of black-brown spots defined on inner side by white lunules; cilia black-brown with a fine white line at base. Hind wing reddish-brown with slight discoidal bar and brown terminal line; cilia ochreous white with a brown line through them; the underside white irrorated with brown, a slight

brown discoidal lunule, crenulate postmedial line, indistinct diffused subterminal shade, and terminal series of small lunules.

Hab. Natal, Karkloof (*Marshall*), 1 ♂ type. *Exp.* 32 millim.

b. (*Euherrhichia*). Mid tibiæ and 1st joint of tarsi in both sexes with large tufts of scales and hair, the hind tibiæ and 1st joint of tarsi moderately fringed with hair; abdomen with very large crest on 3rd segment; male with a large medial ventral corneous hook on preanal segment projecting backwards and covered with hair.

3433. Eriopus mollissima.

Eriopus mollissima, Guen. Noct. ii. p. 294 (1852); Smith, Cat. Noct. N. Am. p. 308.
Erastria rubicunda, Wlk. xii. 808 (1857).

Head and thorax bright rufous mixed with some yellow and dark brown; frons with the lower part white and with black lateral bars; tegulæ whitish at tips; abdomen whitish dorsally suffused with fuscous leaving white segmental lines, the crests rufous and dark brown, the anal tuft and ventral surface tinged with rufous. Fore wing bright rufous suffused and irrorated with brown on costal half of basal area, medial and terminal areas; a slight whitish mark at base; subbasal line yellowish defined on inner side by dark brown suffusion, waved, from costa to vein 1; antemedial line

Fig. 136.—*Eriopus mollissima*, ♂. ½.

double, blackish filled in with rufous, excurved below cell and bent inwards to inner margin, an oblique minutely waved black line before it from submedian fold to inner margin; claviform defined by black; orbicular with black centre and whitish annulus defined by black, some silver on its lower edge, round; reniform with pale rufous centre slightly defined by black and silvery white annulus defined by black, the annulus broad except on outer side where it is reduced to points, the lower extremity rather produced; a slight incurved dark line from lower angle of cell to inner margin; postmedial line double, the inner line strong, black, the outer slight, bent outwards below costa, then minutely waved, slightly incurved at discal fold and strongly below vein 4, angled outwards at vein 1, some white points beyond it on costa; subterminal line white defined on inner side by somewhat dentate brown marks, angled outwards to near termen at veins 7, 6, inwards at discal fold, outwards to termen at veins 4, 3, then incurved and bent outwards to tornus; a fine black terminal line defined on inner side by a fine

yellowish-white line. Hind wing whitish, suffused with brown except on costal area to beyond middle; cilia white slightly mixed with brown; the underside white irrorated with fuscous, a slight discoidal bar, diffused curved postmedial line, traces of diffused subterminal band and terminal series of blackish striæ.

Hab. Canada; U.S.A., E. States, New York, Evans Center (*Grote*), 2 ♂, 1 ♀, Trenton Falls (*Doubleday*), 1 ♂, 1 ♀ type *rubicunda*, Florida (*Doubleday*), 1 ♂ type, Colorado. *Exp.* 24–30 millim.

c. Mid and hind tibiæ, the inner spurs and 1st joint of tarsi fringed with long hair; abdomen with lateral tufts of long hair from base.

3434. Eriopus aluensis.

Dissolophus aluensis, Butl. A. M. N. H. (6) viii. p. 74, pl. 9. f. 4 (1891).
Dissolophus ochraceus, Beth.-Baker, Nov. Zool. xiii. p. 200 (1906).

♂. Head and thorax whitish suffused with rufous; tarsi blackish; abdomen ochreous white tinged with rufous. Fore wing ochreous white suffused in parts and irrorated with rufous; subbasal line represented by a slight blackish striga from costa and point below the cell; antemedial line very indistinct and slightly sinuous, defined by whitish on inner side and with black striæ on it from costa and submedian fold; orbicular a faint small elliptical whitish spot; reniform whitish defined at sides by some black scales and

Fig. 137.—*Eriopus aluensis*, ♂. ¾.

with rufous line in middle, rather quadrate, its upper extremity produced; a rufous medial shade, oblique from costa to reniform and from lower angle of cell to inner margin; postmedial line blackish defined by white on outer side, bent outward and almost obsolete below costa, excurved to vein 4, then oblique, crossed by an oblique rufous shade from two black points on costa towards apex to outer edge of reniform; subterminal line faintly defined by rufous on inner side, excurved at middle and with triangular red-brown mark beyond it at discal fold; a terminal series of small blackish lunules defined by whitish on inner side, obsolescent at middle. Hind wing ochreous white with diffused brown medial and subterminal shades; two dark striæ on termen below apex; the underside with slight discoidal spot, indistinct waved postmedial line and subterminal shade from costa to vein 5 and small black lunules on termen from apex to vein 5.

♀. Head, thorax, and fore wing tinged with olive-green instead

of rufous, the last with the markings much more distinct and darker; hind wing suffused with fuscous.

Hab. Br. New Guinea, Milne Bay (*Meek*), 2 ♀, Aroa R. (*Meek*), type † *ochraceus* in Coll. Bethune-Baker; Louisiades, St. Aignan (*Meek*), 1 ♂; Solomons, Rendova (*Meek*), 1 ♂, Choiseul (*Meek*), 1 ♂, Alu (*Woodford*), 1 ♂ type. *Exp.* 24 millim.

d. Mid and hind tibiæ and 1st joint of tarsi moderately fringed with hair above.
  a^1. Fore wing without oblique white subapical streaks.
    a^2. Fore wing white suffused with olive-yellow ..... *elæastis.*
    b^2. Fore wing ochreous white suffused with rufous ... *guttulalis.*
    c^2. Fore wing red-brown..... *miranda.*
  b^1. Fore wing with oblique white subapical streaks.
    a^2. Fore wing with two white points on outer edge of reniform ..... *nephrosticta.*
    b^2. Fore wing with the reniform defined by a white bar on inner side and white striæ on outer.
      a^3. Fore wing with the white bar on inner edge of reniform erect, the veins of medial area not streaked with pink ..... *strigilineata.*
      b^3. Fore wing with the white bar on inner edge of reniform oblique, the veins of medial area streaked with pink ..... *venata.*

3435. Eriopus elæastis, n. sp.

♂. Head and thorax ochreous white tinged with rufous; tarsi blackish; abdomen ochreous white suffused with blackish brown at middle. Fore wing white suffused with olive-yellow; the costal edge dark brown at base; subbasal line represented by brown points on costa and below cell; medial line rather diffused red-brown, with black striga at costa, oblique to median nervure, inwardly oblique to submedian fold where it meets the oblique black antemedial line

Fig. 138.—*Eriopus elæastis*, ♂. ¾.

defined by whitish on inner side from median nervure to inner margin and obsolete on costal area; orbicular whitish slightly defined by rufous, round; reniform whitish with slight curved rufous line in centre, defined by rufous on inner side and on outer by black, produced to slight streaks below veins 7, 6 and 4, constricted at middle and produced at extremities; postmedial line double, slight, red-brown filled in with white, with black striga at costa, angled below costa, then bent outwards and almost obsolete,

very slightly incurved at discal fold and strongly below vein 4, some white striæ beyond it on costa and two black striæ towards apex; subterminal line represented by an oblique rufous streak from apex, then by somewhat dentate rufous marks, angled inwards in submedian fold; cilia intersected by black streaks at apex, middle and tornus. Hind wing ochreous almost wholly suffused with dark brown; cilia ochreous white intersected with brown from apex to vein 2; the underside suffused with red-brown, a dark brown discoidal lunule with oblique bar above it from costa, sinuous postmedial line and diffused subterminal shade.

Hab. Dutch New Guinea, Kapaur (*Doherty*), 1 ♂ type. *Exp.* 22 millim.

3436. **Eriopus guttulalis.** (Plate CXXI. fig. 8.)

Callopistria guttulalis, Hmpsn. Moths Ind. iv. p. 511 (1906).

♂. Head and thorax white tinged with rufous and mixed with dark red-brown; tegulæ with blackish spots at middle and near tips; abdomen ochreous white mixed with some red-brown, the anal tuft dark brown. Fore wing white tinged with rufous, irrorated and in parts suffused with dark red-brown; subbasal line black, from costa to submedian fold where it ends in a short black streak; antemedial line indistinct, double, blackish, oblique, waved, a white spot before it in submedian interspace with a slight black line from it to inner margin; claviform defined by blackish, extending to median nervure; orbicular whitish faintly defined by blackish, round; reniform whitish faintly defined by blackish and with slight brown line in centre; a black medial line, oblique and sinuous from costa to lower angle of cell, then inwardly oblique, angled inwards in submedian fold and outwards on vein 1; postmedial line indistinct, double, blackish, bent outwards below costa, incurved at discal fold, oblique below vein 4, angled inwards in submedian fold and outwards at vein 1; subterminal line pale, waved, defined on inner side by diffused dentate dark marks and on outer by dark lunules; a terminal series of dark lunules defined on inner side by whitish. Hind wing whitish tinged with reddish brown; the underside white, the costal area tinged with ochreous and slightly irrorated with brown, traces of a minutely waved postmedial line, some dark points on termen from apex to vein 2.

Hab. Ceylon, Hambantota (*Pole*), 1 ♂ type, Puttalam (*Pole*), 1 ♂. *Exp.* 26 millim.

*3437. **Eriopus miranda.**

Eriopus miranda, Saalm, Ber. Senck. Ges. 1880, p. 273; id. Lep. Madag. p. 371, f. 122.

Head and thorax red-brown; abdomen grey-brown with the crests rufous. Fore wing red-brown irrorated with black and white; subbasal line black, minutely dentate, from costa to

submedian fold; antemedial line double filled in with grey, excurved below the cell; orbicular defined by black, round; reniform represented by a pale striga on upper discocellulars and white point at lower angle of cell, both defined by black; postmedial line double filled in with grey, bent outwards below costa, slightly incurved at discal fold, incurved and sinuous below vein 4, some white points beyond it on costa; subterminal line with dark suffusion on inner side, minutely waved, excurved at middle; a terminal series of small black lunules defined by whitish on inner side. Hind wing red-brown with a greyish tinge.

Hab. Madagascar. *Exp.* 30 millim. This species is unknown to me.

3438. **Eriopus nephrosticta**, n. sp. (Plate CXXI. fig. 9.)

♂. Head and thorax rufous mixed with ochreous and a few dark brown scales; tarsi blackish ringed with white; abdomen rufous, the crests with some dark scales. Fore wing rufous mixed with some ochreous and irrorated with black; subbasal line black, waved, from costa to submedian fold; antemedial line double, black filled in with pale rufous, waved, bent inwards to inner margin, some slight black marks before it; claviform represented by a faint blackish mark; orbicular slightly defined by black, small, elliptical; reniform incompletely defined by black, with some blackish on inner side of centre and white points at upper and lower extremities; a diffused waved blackish medial line from vein 6 to inner margin, excurved beyond lower angle of cell; postmedial line formed of small black lunules defined on outer side by pale rufous, double towards costa, bent outwards below costa, oblique to vein 4, then incurved, some white points beyond it on costa; subterminal line defined on inner side by slight dentate blackish marks, formed by three white lunules below costa, angled inwards at discal fold and outwards at vein 4, then almost obsolete and incurved; a terminal series of small black spots defined by patches of white scales on inner side; cilia with a fine whitish line at base. Hind wing purplish red, the terminal area rather darker; traces of a medial line oblique to vein 4 and ending at vein 2; cilia whitish with a brown line through them; the underside whitish thickly irrorated with rufous, a black discoidal lunule, two small spots below middle of costa, a crenulate postmedial line bent inwards to costa, and terminal series of small lunules from apex to vein 2.

Hab. S. Nigeria, Old Calabar (*Sampson*), 1 ♂ type. *Exp.* 32 millim.

3439. **Eriopus strigilineata.** (Plate CXXI. fig. 10.)

Callopistria strigilineata, Hmpsn. Moths Ind. ii. p. 254 (1894).

♂. Head and thorax dark red-brown mixed with white; lower part of frons white; vertex of head with black spot; tegulæ

whitish with diffused brown medial line; tarsi ringed with white; abdomen whitish mixed with brown leaving white segmental lines, the crests rufous. Fore wing whitish almost wholly suffused with rufous and irrorated with dark brown; subbasal line white defined on each side by slight black marks below the cell, waved, from costa to vein 1, an oblique white striga beyond it across the cell; antemedial line double, brown filled in with white, waved, excurved below submedian fold, an oblique white striga before it from submedian fold to vein 1; orbicular with brown centre and white annulus defined by black, irregularly rounded; reniform defined on inner side by a white bar and on outer by white points and a striga beyond lower angle of cell, a dark brown patch before it in cell; an oblique red-brown shade from lower angle of cell to inner margin; postmedial line double, brown filled in with white, the inner line lunulate, bent outwards below costa, then minutely waved, incurved below vein 4, some white points beyond it on costa; subterminal line with white lunules above veins 7 and 6, slight and angled inwards in discal fold, then strong and angled outwards to termen at vein 4, then slight, incurved, and bent outwards to tornus; a terminal series of small black spots defined on inner side by white striæ; cilia blackish with fine yellowish line at base and white points at the veins. Hind wing whitish suffused with pale red-brown; a faint discoidal spot and curved postmedial line; a series of whitish striæ before termen from apex to vein 2; cilia yellowish white with brown spots at tips from apex to vein 2; the underside white, the costal area slightly irrorated with brown, an indistinct discoidal spot and curved sinuous postmedial line.

Hab. Sikhim (*Möller*), 1 ♂. *Exp.* 34 millim. Type † in Coll. Rothschild.

3440. **Eriopus venata.** (Plate CXXI. fig. 11.)

Callopistria venata, Leech, Trans. Ent. Soc. 1900, p. 111.

Head and thorax black-brown mixed with white and some rufous; a white bar between antennæ; tegulæ with white medial line and whitish tips; tibiæ and tarsi ringed with white; abdomen grey-brown with whitish segmental lines, the crests ochreous and black. Fore wing greyish tinged with purplish pink and thickly irrorated and suffused with black, the veins of medial area with pinkish streaks; subbasal line represented by white striæ from costa and cell with an oblique white striga beyond it across the cell; antemedial line double, black filled in with white and defined by pinkish on outer side, oblique from costa to vein 1, bent inwards to inner margin, an oblique whitish striga before it from submedian fold to vein 1; claviform defined by an oblique pinkish streak above; orbicular with black centre and whitish annulus, oblique elliptical; reniform with oblique white bar on inner side, curved pink lunule in centre defined by black on inner side, its

outer edge defined by an oblique white striga and bar beyond lower angle of cell; an oblique series of blackish marks in the interspaces from beyond lower angle of cell to inner margin; postmedial line double, black filled in with white, the inner line lunulate, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line formed by oblique white streaks above veins 7 and 6, then slight and angled inwards at discal fold, with oblique white streak to termen at vein 4, then obsolescent defined by blackish on inner side, incurved and with white striga between veins 3 and 2; a terminal series of white lunules; cilia black at tips. Hind wing reddish brown with terminal series of slight brown lunules; cilia with slight white line at base, wholly white at submedian interspace; the underside white irrorated with brown especially on costal area, a slight discoidal spot, waved postmedial line, indistinct diffused subterminal shade, and terminal series of small lunules defined by white on inner side.

Hab. Centr. China, Ichang (*Mrs. Pratt*), 1 ♀; W. China, Chang-yang (*Pratt*), 3 ♂ type; Assam, Khásis, 1 ♂. *Exp.* 30–36 millim.

e. Hind tarsi with the 1st joint not fringed with hair.

3441. Eriopus microptera, n. sp.

♂. Head and thorax rufous mixed with whitish; pectus, legs, and abdomen whitish tinged with rufous. Fore wing bright rufous mixed with some white, the veins slightly streaked with white; subbasal line represented by white striæ from costa and cell with oblique white striga beyond it across the cell; antemedial line red-brown defined on each side by white, slightly angled outwards below

Fig. 139.—*Eriopus microptera.* ♂. ⅔.

costa, then strongly excurved and bent inwards to inner margin, an oblique white striga before it from submedian fold to vein 1; orbicular with dark red-brown centre and white annulus, very narrow and oblique; reniform with rufous centre defined on inner side by dark red-brown and white annulus, oblique ∀-shaped, a white striga beyond lower angle of cell defined on inner side by dark red-brown, a dark red-brown patch before it extending to costa; postmedial line double, red-brown filled in with white, angled inwards

below costa, then bent outwards, oblique to vein 4, then incurved, a white line beyond it from vein 7 to inner margin and some white points on costa; subterminal line white with oblique streaks above veins 7 and 6, angled inwards to postmedial line above vein 5, then strong and angled outwards to termen at vein 4, then reduced to striæ, oblique to submedian fold and bent outwards to tornus; a terminal series of deep rufous lunules defined on inner side by slight white lunules. Hind wing whitish suffused with red-brown; cilia white; the underside white slightly irrorated with red-brown, a red-brown discoidal lunule, indistinct curved postmedial line, and terminal series of small lunules.

Hab. Borneo, Sarawak (*Wallace*), 1 ♂ type. *Exp.* 24 millin.

B. Fore wing with the termen very slightly angled at vein 4.
a. (*Methorasa*). Mid tibiæ of male fringed both sides with very long hair, the 1st three joints of tarsi fringed with long hair above, in female the 1st joint only fringed with hair above; hind tibiæ moderately fringed with hair above.
*a*¹. Fore wing with the ground-colour grey ..... *latreillei.*
*b*¹. Fore wing black-brown ..... *complicata.*

3442. Eriopus latreillei.

Eriopus quieta, Treit. Eur. Schmett. v. (3) p. 259 (1826), and x. (2) p. 49 (nec. Hübn.).
Noctua latreillei, Dup. Lép. Fr. vii. p. 327, pl. 120. f. 2 (1827); Geyer, Schmett. Eur. Noct. ff. 818–20; Hmpsn. Moths Ind. ii. p. 253; Staud. Cat. Lep. pal. p. 184.
Erastria roseitelum, Wlk. xii. 864 (1857).

♂. Head and thorax dark brown mixed with white and black scales; lower part of frons white with black bar above; tegulæ with slight black spots near tips; pectus whitish; tibiæ banded with black, the tarsi black with pale rings; abdomen white dorsally suffused with brown leaving slight white segmental lines, the crest on 3rd segment tipped with black. Fore wing grey suffused with

Fig. 140.—*Eriopus latreillei*, ♂. ½.

brown and thickly irrorated with black; a white mark at base; subbasal line double, black filled in with white and defined by whitish on outer side, waved, from costa to submedian fold where there is a white spot defined by black beyond it, a slight white mark beyond it in cell; antemedial line double, black filled in with white, minutely waved; claviform faintly defined by blackish;

orbicular with white annulus defined by black, its centre slightly defined by black, round; reniform with white centre defined by blackish, with white annulus on inner side and white points on outer, its lower extremity produced; an indistinct waved blackish medial line; postmedial line double, black filled in with whitish, bent outwards below costa, then minutely waved, slightly angled inwards at discal fold, incurved below vein 4, angled outwards at vein 1, some white points beyond it on costa; a wedge-shaped yellowish mark at discal fold; subterminal line formed by small, rather diffused lunulate white marks from costa to vein 4, then defined on inner side by faint blackish lunules and with slight white marks above veins 2 and 1; a fine waved whitish line before termen; cilia with fine yellowish line at base followed by a black line, the tips chequered white and black. Hind wing white tinged with brown especially on terminal area; a faint dark discoidal bar; cilia white; the underside with the costal and terminal areas irrorated with brown, a dark discoidal spot, crenulate postmedial line, and terminal series of black lunules from apex to vein 2.

♀. Darker, the hind wing wholly suffused with fuscous.

Hab. S. France (*Millière*, *Walsingham*), Zeller, Frey, and Leech Colls.; Austria, Tirol, Carniola; Hungary; Switzerland, Simplon, Frey Coll.; Spain, Leech Coll; Dalmatia (*Heyne*, *Mathew*); Algeria; Madeira; Canaries, Guimar (*Walsingham*), 2 ♂, 2♀; Congo (*Richardson*), 1 ♀ type *roseitelum*; Egypt; Br. E. Africa, Neugia (*Crawshay*), 1 ♂ Eb. Urru (*Betton*), 1 ♀; Transvaal (*Cholmley*), 1 ♂, 1 ♀; Natal, Durban (*Leigh*), 1 ♂; Basutoland, Maseru (*Crawshay*), 1 ♀; C. Colony, Deelfontein (*Sloggett*), 1 ♂, 1 ♀; Armenia; Asia Minor, Bithynia; Syria; Punjab, Sultanpur (*G. Young*), 2 ♂, 2 ♀, Simla (*Swinhoe*), 2 ♂, 1 ♀, Dharmsála (*Hocking*), 2 ♂, 6 ♀; Madras, Bangalore (*Watson*), 2 ♀, Nilgiris (*Hampson*, *Campbell*), 2 ♂, 2 ♀. *Exp.* 24–32 millim.

Larva. Kirby, Butt. & Moths Eur. p. 248; Hffm. Raup. p. 100. pl. 28. f. 6.

Pale rusty red with many indistinct pale longitudinal lines; stigmata yellow. Food-plants: the reddish scales covering the capsules of *Ceterach officinarum*, and *Notochlæna marante*. 10.

3443. **Eriopus complicata.** (Plate CXXI. fig. 12.)

Methorasa complicata, Holl. Psyche, vii. p. 7 and vi. pl. 21. fig. 2 (1894).

♀. Head and thorax whitish tinged with rufous and mixed with red-brown; palpi with the extremity of 2nd joint whitish; tarsi ringed with whitish; abdomen red-brown mixed with whitish at extremity and on ventral surface. Fore wing whitish almost wholly suffused and irrorated with black-brown, the veins with slight pale streaks; a yellowish-whitish striga from base of costa; subbasal line yellowish white, angled inwards in cell and excurved below costa and cell, ending at vein 1; antemedial line yellowish white, slightly angled outwards below costa, then excurved, an

oblique yellowish-white striga before it from submedian fold to vein 1; orbicular and reniform defined by yellowish white, the former narrow and somewhat constricted at middle, the latter a narrow oblique lunule with small white spot beyond its lower extremity; postmedial line double, black filled in with yellowish white, bent outwards below costa, then minutely waved, slightly incurved at discal fold, incurved below vein 4, some white points beyond it on costa; subterminal line with oblique white bar from costa and oblique streak above vein 6, then yellowish, angled inwards above vein 5 and outwards to termen at vein 4, then almost obsolete, incurved and with white spot between veins 3 and 2; a series of white striæ just before termen; cilia black-brown with yellowish line at base. Hind wing dark reddish brown, the cilia with yellowish-white line at base; the underside white thickly irrorated with dark brown, a black discoidal lunule, postmedial line rather diffused, curved and slightly waved, a diffused subterminal shade and terminal series of small black lunules from apex to vein 2.

Hab. S. Nigeria, Old Calabar (*Sampson*), 1 ♀; Congo, Ogowe R. *Exp.* 36 millim.

b. Mid and hind femora of male with fringes of long hair; abdomen with ventral corneous hook on preanal segment projecting backwards.
  a^1. Fore wing with the claviform filled in with silvery white.
    a^2. Hind wing white slightly irrorated with brown ... *monetifera.*
    b^2. Hind wing deep red-brown ... *cordata.*
  b^1. Fore wing with the claviform not filled in with silvery white ... *argentilinea.*

3444. Eriopus monetifera.

Eriopus monetifera, Guen. Noct. ii. p. 295, pl. 14. f. 4 (1852); Smith, Cat. Noct. N. Am. p. 308.

Head and thorax yellowish suffused with fiery red and mixed with deep red; palpi with the 3rd joint whitish; the tufts of hair from mid and hind femora of male blackish; abdomen yellowish white with brownish dorsal bands, the crest on 3rd segment rufous at tip. Fore wing yellow mostly suffused with fiery red, the costal area yellow; subbasal line silvery white slightly defined by black on inner side, angled inwards in cell and expanding into a spot below the cell defined by black on outer side; antemedial line formed by silvery white obliquely placed points on costa and subcostal nervure, a bar-shaped spot in cell, a large rather triangular spot in submedian interspace and oblique spot on inner margin, all defined by black; orbicular represented by two silvery white points defined by black; reniform with two silvery white spots on inner edge, a yellowish lunule in centre, an oblique silvery white spot at upper extremity and large irregularly rounded spot at lower extremity, all defined by black; postmedial line yellow and strongly

bent outwards below costa, then formed by silvery white lunules defined by black, slightly incurved at discal fold, incurved below vein 4, some white points beyond it on costa on a red patch; subterminal line absent; a diffused oblique yellow patch from apex

Fig. 141.—*Eriopus monetifera*, ♂ ½.

and some yellow on middle of terminal area; a series of white striæ defined on each side by black just before termen. Hind wing white slightly irrorated with brown; the underside white slightly irrorated with red-brown, the costa faintly tinged with yellow, a small black discoidal spot, postmedial line slightly bent outwards below costa, minutely waved to vein 5, then oblique, and small dark lunules on termen below veins 8 and 7.

Hab. Canada, 1 ♂, Nova Scotia; U.S.A., Northern, Eastern, and Southern States, New York, 3 ♂, 3 ♀, Evans Center (*Grote*), 1 ♀, New Jersey, Florida. *Exp.* 28–30 millim.

3445. Eriopus cordata. (Plate CXXI. fig. 13.)

Bombyx cordata, Ljung. Kongl. Vetenskaps. Akad. Handl. p. 347, pl. ii. figs. D 1 & 2 (1825).

♀. Head and thorax yellow mixed with deep rufous (abdomen wanting). Fore wing yellow almost entirely suffused with deep rufous, the costal area yellower to postmedial line; subbasal line yellow defined by rufous on inner side, angled inwards in cell and expanding into a white spot below the cell; antemedial line with oblique yellowish bar from costa, small round silver spot in cell, large triangular spot in submedian interspace and semicircular spot on inner margin, all defined by blackish; orbicular represented by a faint yellowish striga in cell defined by red-brown on outer side; reniform with yellow mark on inner side above and silver spot defined by black below, a yellow lunule in centre, an oblique silver spot at upper extremity and large irregularly rounded patch at lower extremity defined by black; postmedial line yellow and strongly bent outward below costa, then formed by small silver lunules defined by black, slightly incurved at discal fold, incurved below vein 4, some yellow points beyond it on costa; subterminal line rufous, dentate; an oblique diffused yellow shade from apex to postmedial line at vein 4; the terminal area yellow between veins 5 and 2 with a small dark wedge-shaped spot from termen below vein 4; a series of white striæ defined on each side by black just before termen; cilia chequered red-brown and yellowish white.

Hind wing deep red-brown; cilia yellow at base, white at tips; the underside yellowish white thickly irrorated with red-brown, a small brown discoidal spot, postmedial line rather diffused, curved and minutely waved, a terminal series of small red-brown lunules from apex to vein 2.

Hab. W. Indies, 1 ♀. *Exp.* 34 millim.

3446. Eriopus argentilinea. (Plate CXXI. fig. 14.)

Callopistria argentilinea, Wlk. xii. 863 (1857); Smith, Cat. Noct. N. Am p. 308.

♂. Head and thorax deep red mixed with pale pink; upper part of frons and a bar on vertex of head blackish; tegulæ with some blackish spots and a pinkish line near base; pectus and fore tarsi whitish; abdomen red-brown with whitish segmental lines, anal tuft, and ventral surface. Fore wing pale pinkish largely suffused and irrorated with deep red, the terminal area deep red; a black striga from base of costa with spot beyond it on median nervure; subbasal line double, black filled in with whitish and in places with silver, angled inwards in cell and ending at submedian fold; antemedial line double, black filled in with silvery white, slightly angled outwards below costa, then waved, black spots before it in and above cell and an irregular oblique line from cell to above inner margin; claviform crimson defined by black; orbicular crimson indistinctly defined by black, oblong, with a small round crimson spot beyond it defined by black; reniform pale crimson defined by black, its centre defined by black and the lower half of annulus silvery white; postmedial line double, blackish filled in with silvery white, angled inwards below costa, then strongly bent outwards, angled inwards at discal fold, incurved and dentate below vein 4, some pale crimson striæ beyond it from costa; subterminal line pale crimson, strongly dentate to termen at veins 7, 6, 4, 3; a terminal series of small black spots defined on inner side by white striæ; cilia deep red with series of slight yellowish points at base and spots at tips. Hind wing deep pinkish red-brown; cilia chequered white and red-brown; the underside white irrorated with red-brown, a brown discoidal lunule, rather diffused waved postmedial line incurved below vein 3, diffused subterminal shade, and terminal series of slight lunules.

Hab. U.S.A., Middle, Southern, and Central States, 1 ♂ type *Exp.* 30 millim.

c. Mid and hind tibiæ and 1st joint of tarsi and the inner spur of mid tibiæ with very large tufts of hair and scales.

3447. Eriopus variegata.

Methorasa variegata, Swinh. Trans. Ent. Soc. 1895, p. 44; Hmpsn. Moths Ind. iv. p. 511.

Head and thorax greenish grey mixed with some brown and black

ales; frons with lateral black spots; tegulæ with black spots at ase; tarsi brown ringed with white; abdomen reddish brown; the crests dark brown, the ventral surface greyish with series of black points. Fore wing greenish grey irrorated with black and suffused in parts with brown; subbasal line represented by double black striæ from costa and cell, an oblique black striga beyond it across the cell; antemedial line indistinct, double, black, much interrupted, oblique from costa to above vein 1 and bent inwards to inner margin, an oblique black line before it from submedian fold

Fig. 142.—*Eriopus variegata*, ♂. ⅔.

to inner margin; orbicular a minute somewhat V-shaped mark defined by black; reniform with two oblique black lines on inner side, its outer and lower edges faintly defined by black and with two obliquely placed white points at lower extremity defined by black; an oblique blackish shade from lower angle of cell to inner margin; postmedial line double, bent outwards below costa, then minutely waved, oblique to vein 4, then incurved, some white points beyond it on costa; subterminal line with oblique white streaks above veins 7 and 6, then faint, slightly defined by brown on inner side, waved and excurved at middle; a terminal series of small black lunules; cilia with fine yellowish line at base. Hind wing reddish brown, whitish at base; cilia yellowish, brown at tips; the underside greenish white irrorated with black, the inner area tinged with red-brown, an oblique blackish bar from middle of costa, slight discoidal lunule, crenulate postmedial line, and some blackish points on apical part of termen.

Hab. Bhutan (*Dudgeon*), 1 ♂; Assam, Khásis, 1 ♀ type; Borneo, Sarawak. *Exp.* ♂ 24, ♀ 30 millim.

d. Fore, mid, and hind tibiæ of male with large tufts of hair and scales above.
  a^1. Fore wing without white spot beyond the claviform.
    a^2. Hind wing with basal area white ..... *leucobasis*.
    b^2. Hind wing uniform red-brown ..... *manta*.
  b^1. Fore wing with white spot beyond the claviform.
    a^2. Fore wing red-brown ..... *niveigutta*.
    b^2. Fore wing olive-green ..... *chlorocrota*.

3448. Eriopus leucobasis, n. sp.

Head and thorax purple-brown mixed with some white and black scales; palpi blackish, the extremities of 2nd and 3rd joints white; frons white with lateral black bars; tegulæ with blackish lines at base, middle and tips; spurs tipped with white, the tarsi ringed with white; abdomen whitish suffused with red-brown leaving whitish segmental bands, the crest on 3rd segment black. Fore wing ochreous whitish almost entirely suffused and irrorated with dark purple-brown; subbasal line represented by double blackish striæ from costa and cell; antemedial line very indistinct, blackish, interrupted, with black line before it from submedian fold to inner

Fig. 143.—*Eriopus leucobasis*, ♂. ⅔.

margin; orbicular a small indistinct whitish spot; reniform indistinctly defined by whitish, narrow and with white points beyond its lower extremity; a diffused oblique waved blackish line from beyond lower angle of cell to inner margin; postmedial line blackish with white striga at costa, bent outwards below costa, then dentate, oblique to vein 4, then inwardly oblique, some white spots beyond it on costa; subterminal line strong, white and dentate from costa to vein 6, oblique and yellowish to vein 4, then blackish, waved, with small whitish spot beyond it below vein 3; a terminal series of small black lunules defined on inner side by some white scales; a fine yellowish line at base of cilia. Hind wing with the basal half yellowish white, the terminal half purple-brown; cilia chequered yellowish white and brown; the underside white irrorated with purple-brown except on basal half of inner area, a black discoidal spot, diffused purple-brown medial band, black postmedial line, bent outwards below costa, then crenulate, incurved and obsolescent below vein 3, a terminal series of black spots from apex to vein 5.

Hab. Assam, Khásis; Ceylon, Kandy (*Green*), 2 ♀; Perak, Goping; Java, Arjuno (*Doherty*), 1 ♂ type. *Exp.* 28–30 millim.

3449. Eriopus manta. (Plate CXXI. fig. 15.)

Methorasa manta, Swinh. A. M. N. H. (7) ix. p. 173 (1902).

♂. Head and thorax red-brown mixed with pinkish white; abdomen pinkish mixed with bright rufous. Fore wing purplish red slightly irrorated with dark brown; a black point at base;

subbasal line represented by minute black streaks below costa and cell with a minute streak beyond it in cell; antemedial line black, slightly angled outwards below costa, then excurved and bent inwards to inner margin, an oblique black striga before it from submedian fold to vein 1 with short black streak below it; orbicular absent; reniform represented by an oblique black striga on upper discocellular and two white points at lower angle of cell; a dark medial line oblique from costa to reniform, excurved beyond lower angle of cell, then oblique and sinuous; postmedial line double, the outer line slight, bent outwards below costa, then dentate, oblique to vein 4, then inwardly oblique and incurved at submedian fold, some white points beyond it on costa; subterminal line white and dentate from costa to vein 6, then very indistinct, waved, with dark streaks beyond it in the interspaces ending in slight terminal lunules; cilia with slight white striæ at base. Hind wing purplish red-brown, the basal area whitish; cilia whitish with a red-brown line through them; the underside purplish white irrorated with purplish red-brown, a slight black discoidal point, postmedial line bent outwards below costa, then crenulate, a terminal series of slight brown lunules.

Hab. Perak, Goping (*Kunstler*), 1 ♂ type. *Exp.* 28 millim.

3450. Eriopus clava. (Plate CXXI. fig. 16.)

Apamea clava, Leech, Trans. Ent. Soc. 1900, p. 66.

♀. Head and thorax purplish red-brown slightly mixed with whitish; frons white with black bar above; tegulæ with black medial line; patagia with slight black streak near upper edge; mid and hind tibiæ streaked with black, the tarsi ringed with white; abdomen red-brown, the ventral surface white mixed with red-brown and with sublateral and ventral series of black striæ. Fore wing pale purplish pink irrorated with purplish brown and blackish; a slight black streak at base of subcostal nervure and black streak below base of cell; subbasal line represented by an oblique black striga from costa; antemedial line slight, black defined by purplish on inner side, angled outwards below costa, then excurved and sinuous, with slight black streaks before it in submedian fold and below vein 1; claviform slightly defined by black; orbicular with purplish annulus, round; reniform with pinkish line on inner edge followed by a black line, angled inwards on median nervure, then pinkish with slight black striga in centre and two purplish points at lower extremity, the upper with black streak from it to postmedial line, the lower with black point on outer edge; a faint waved diffused dark line from beyond lower angle of cell to inner margin; postmedial line black defined on outer side by purplish, with white striga from costa, bent outwards below costa, then waved, oblique to vein 4, then inwardly oblique and excurved at vein 1, some white points beyond it on costa with blackish streaks between

them and some white irroration below them ; subterminal line white and dentate from costa to vein 6, then very indistinct, with black streaks in the interspaces beyond it ending in small terminal lunules ; cilia with fine whitish line at base and chequered with whitish at tips. Hind wing deep purplish red-brown ; cilia white with series of brown spots from apex to vein 2 ; the underside white irrorated with brown, a dark bar from middle of costa to the discoidal lunule, postmedial line bent outwards below costa, then crenulate to vein 2, terminal black points from apex to vein 5.

Hab. W. China, Omei-shán, 1 ♀ type. *Exp.* 36 millim.

3451. Eriopus niveigutta. (Plate CXXI. fig. 17.)

Eulepa niveigutta, Wlk. Journ. Linn. Soc., Zool. vii. p. 54 (1864) ; Swinh. Cat. Het. Mus. Oxon. ii. p. 52, pl. 1. fig. 21.

♀. Head and thorax rufous mixed with white ; frons white with dark bar above ; pectus and legs red-brown, the tibiæ and tarsi ringed with white, abdomen whitish suffused and irrorated with red-brown. Fore wing red-brown mixed with some white ; a white spot defined by brown below base of cell ; a subbasal white band from costa to vein 1, expanding below costa and cell ; an indistinct oblique waved antemedial brown line with white spot beyond it at costa ; claviform white defined by brown ; orbicular white defined by brown, round, very near end of cell, with yellow-white spots tinged with rufous below, before and beyond its upper part ; reniform absent ; postmedial line red-brown with a white patch on it at costa, slightly bent outwards below costa, then dentate and produced to white points on the veins, oblique below vein 4, some white points beyond it on costa ; subbasal line represented by an oblique white bar from costa, then by a series of white points ; a terminal series of white points and a triangular spot below vein 4. Hind wing rufous, the costal area whitish to beyond middle ; a slight discoidal point ; a fine dark terminal line ; cilia whitish with a red-brown line through them ; the underside white irrorated with red-brown, a black discoidal lunule, maculate curved postmedial line, and terminal series of lunules.

Hab. Borneo, Sarawak (*Wallace*), 1 ♂. *Exp.* 24 millim.

3452. Eriopus chlorocroa, n. sp. (Plate CXXI. fig. 18.)

♀. Head and thorax olive-green mixed with some whitish and dark brown ; palpi with the extremity of 2nd joint whitish ; frons white with black bars above ; tarsi slightly ringed with white ; abdomen yellowish irrorated with dark brown. Fore wing olive-green suffused in parts with rufous and irrorated with dark brown especially on ante- and postmedial areas ; a white spot defined by some black scales below base of cell ; subbasal line represented by an oblique white bar from costa and point in cell ; antemedial line

with an oblique white bar from costa, then indistinct, pale, waved, with white points on median nervure and vein 1, claviform an elliptical white spot; orbicular an elliptical white spot; reniform a small white lunule with minute round white spot beyond it; postmedial line with white bar from costa, then slight, double, black filled in with yellowish, bent outwards below costa, then with minute white points beyond it on the veins, incurved below vein 4, some white points beyond it on costa; subterminal line indistinct, pale, defined on inner side by small dentate black marks, slightly incurved at discal fold and below vein 3; an oblique black shade from apex; a terminal series of slight black lunules. Hind wing greyish suffused with reddish brown especially on terminal area; a blackish discoidal lunule and terminal series of points; the underside white, the costal area and terminal area to vein 4 irrorated with black, a black discoidal spot, postmedial line bent outwards below costa, waved to vein 4, then oblique, a terminal series of slight black lunules.

Hab. Sumatra, Kaba, Hot Springs Pot Volcano, 3,000′ (*H. O. Forbes*), 1 ♀ type. *Exp.* 24 millim.

Genus **BORBOTANA.**

	Type.
Borbotana, Wlk. xv. 1651 (1858)	*nivifascia.*
Choluata, Wlk. Journ. Linn. Soc., Zool. vii. p. 57 (1864).....	*nivifascia.*

Proboscis fully developed; palpi upturned, the 2nd joint moderately scaled and reaching about to vertex of head, the 3rd moderate; frons smooth; eyes large, rounded; antennæ with large tuft of scales from basal joint, in male typically serrate and with long fasciculate cilia; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibiæ thickly scaled; abdomen with dorsal crests on basal segments. Fore wing with the apex rectangular, the termen evenly curved; veins 3 and 5 from near angle of cell; vein 6 from below angle of cell; 7 from angle; 8, 9, 10 stalked, or 10 from cell in male; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male serrate and with fascicles of long cilia; fore wing with vein 7 downcurved at base and with groove of ribbed membrane above it.

A. Fore wing with the triangular discoidal spot rather before the oblique band; hind wing wholly tinged with rufous ... *nivifascia.*
B. Fore wing with the triangular discoidal spot in line with oblique band; hind wing white, the terminal area rufous to submedian fold ..... *cebœa.*

3453. Borbotana nivifascia.

Borbotana nivifascia, Wlk. xv. 1651 (1858).
Choluata eburneifera, Wlk. Journ. Linn. Soc., Zool. vii. p. 57 (1864).
Heterochroma leucographa, Snell. Tijd. v. Ent. xx. p. 70, pl. 5. f. 5 *a-d* (1877).

Head and thorax deep rufous mixed with some white, metathorax with white mark; palpi with the extremities of 2nd and 3rd joints

white; abdomen whitish tinged with rufous especially towards extremity, the dorsal crests rufous, the ventral surface thickly irrorated with rufous. Fore wing deep rufous; a broad irregular white antemedial band, its inner edge waved, its outer angled outwards below costa and submedian fold; a white point in middle of cell; a large white discoidal lunule, its inner edges angled inwards, two to four white points beyond it, a spot above it on costa and a line from below it to inner margin angled inwards in submedian fold, a redder patch beyond it between veins 4 and 2 and an obscure oblique reddish fascia from costa just before apex;

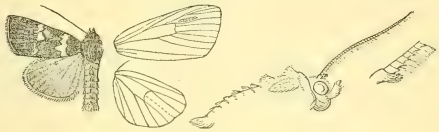


Fig. 144.—*Borbotana nivifascia*, ♂. ½.

a terminal series of faint brown lunules. Hind wing pale rufous, the basal and costal areas pale; the underside whitish irrorated with rufous, the costal and terminal areas rufous irrorated with white, a rufous discoidal lunule and crenulate postmedial line.

Hab. Sumatra; Borneo, Sarawak (*Wallace*), 1 ♂, 1 ♀ type; Celebes. *Exp.* 30 millim.

Subsp. 1. Rather darker; fore wing with the line from below discoidal lunule expanding into a patch from submedian fold to inner margin.

Hab. Sikhim, 1800′ (*Dudgeon*), 1 ♀. *Exp.* 28 millim.

*3454. Borbotana cebeæ. (Plate CXXI. fig. 19.)

Borbotana kebeæ, Beth.-Baker, Nov. Zool. xiii. p. 207 (1906).

♂. Head and thorax bright rufous mixed with yellowish white; palpi with the extremity of 2nd joint white, the 3rd joint white at base in front; lower part of frons white; antennæ ringed with white; pectus and legs rufous, the former white at base; abdomen yellowish white, the crests, anal tuft, and ventral surface tinged with rufous. Fore wing deep rufous slightly mixed with yellowish; a yellow point defined by black at base of cell; a silvery white antemedial band defined at sides by black lines, its outer edge slightly angled outwards below costa and strongly in submedian fold; a narrow oblique silvery white band from costa just beyond middle to inner margin near tornus, defined at sides by black lines, interrupted at lower angle of cell, with three white points beyond it at end of cell, its inner edge angled inwards in cell and submedian fold, some white points beyond it on costa; subterminal line dentate, fine and white towards costa, then blackish and diffused on

outer side, angled inwards in discal fold and to the postmedial band in submedian fold; a terminal series of black points; a fine yellowish line at base of cilia. Hind wing white, the terminal area suffused with pale purplish rufous from apex to submedian fold towards which it narrows; cilia rufous, white towards tornus; the underside with the costal area suffused with rufous and irrorated with white, the terminal area suffused with rufous to submedian fold, a rufous discoidal spot, postmedial line slightly bent outwards below costa, crenulate to vein 5, then obsolescent, a fine yellow line at base of cilia.

Hab. Br. New Guinea, Mt. Kebea (*Pratt*), type † ♂ in Coll. Bethune-Baker, Ekeikei. *Exp.* 32 millim.

Sect. II. Antennæ of male minutely ciliated.

A. Fore wing with veins 6, 7 downcurved at base and with slight grooves of ribbed membrane above them.

3455. Borbotana eceicei.

Borbotana ekeikei, Beth.-Baker, Nov. Zool. xiii. p. 207 (1906).

♂. Head and tegulæ fiery red, the latter with a fine pale line near base defined by purplish rufous above; antennæ black-brown; thorax very dark red-brown with a yellowish dorsal fascia; pectus whitish mixed with rufous; legs purplish red-brown; abdomen yellowish white tinged with rufous, the crests and ventral surface rufous. Fore wing with the basal half very dark red-brown, the terminal half silvery purplish grey, tinged with rufous beyond the cell, the terminal area suffused with rufous; a dorsal silvery white antemedial band, its inner edge incurved, its outer excurved

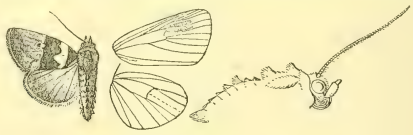


Fig. 145.—*Borbotana eceicei*, ♂. ½.

below costa and strongly in submedian interspace; the dark area with an oblique silvery white line on its outer edge, angled outwards beyond the cell and enclosing a small triangular dark spot beyond a small white discoidal lunule; a rufous shade on postmedial part of costa with some white points on the costa; an oblique red-brown fascia from apex to discal fold formed of short diffused streaks, then by finer streaks angled outwards at vein 4, and below submedian fold almost obsolete and bent outwards to tornus; cilia rufous. Hind wing white, the costal and terminal areas broadly suffused with pale rufous; cilia rufous; the underside with the costal area rufous irrorated with white, the terminal area suffused

with rufous, a small rufous discoidal spot and minutely crenulate postmedial line slightly bent outwards below costa.

Hab. Br. New Guinea, Ekeikei (*Pratt*), type † ♂ in Coll. Bethune-Baker. *Exp.* 26 millim.

B. Fore wing with veins 8, 9 curved downwards and with groove of ribbed membrane above them, 10 from cell and curved upwards.

*3456. Borbotana dinava.

Borbotana dinawa, Beth.-Baker, Nov. Zool. xiii. p. 208 (1906).

♂. Head and thorax very dark purplish brown; tegulæ tipped with white at middle; pectus whitish at sides; abdomen whitish suffused with dark purplish brown on dorsum and on terminal half of ventral surface. Fore wing very dark chocolate-brown with a purplish-grey gloss except on disk; a very oblique pure white fascia from base of costa to middle of submedian fold where it ends in a point, its upper edge angled outwards in cell; a triangular white mark in end of cell with its lower extremity produced as a fascia to above middle of vein 4 with a white point beyond it; an oblique

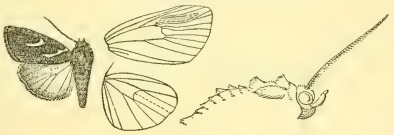


Fig. 146.—*Borbotana dinava*, ♂. ½.

dark band formed of short diffused streaks from apex to inner margin beyond middle where there is a white striga on its outer edge; a narrow black-brown terminal band. Hind wing white, the terminal area suffused with purple-brown, broadly at costa, narrowing to tornus; cilia purple-brown, whitish towards tornus; the underside with the costal and terminal areas suffused with red-brown, a small discoidal spot and postmedial line excurved between veins 7 and 2.

Hab. Br. New Guinea, Dinawa (*Pratt*), type † ♂ in Coll. Bethune-Baker. *Exp.* 28 millim.

Genus **TELESILLA**.

	Type.
Placodes, Dup. Cat. Méth. p. 143 (1844), nec Erich. Col. 1834	*amethystina*.
Telesilla, Herr.-Schäff. Schmett. Eur. vi. Index, p. 47 (1855).	*amethystina*.
Eucarta, Led. Noct. Eur. p. 168 (1857)	*amethystina*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching to about vertex of head and rather broadly fringed with hair in front, the 3rd moderate; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal series of crests, the crest

on 3rd segment large. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3457. Telesilla amethystina.

Noctua amethystina, Hübn. Eur. Schmett., Noct. ff. 69, 597–8 (1802); Dup. Lép. Fr. vi. p. 328, pl. 93. ff. 3, 4; Frr. Neue Beitr. pl. 639; Staud. Cat. Lep. pal. p. 235.

Head and thorax purplish pink mixed with red-brown; basal joint of antennæ with white ring at tip; tegulæ tipped with whitish; pectus and legs red-brown, the tarsi ringed with white; abdomen red-brown tinged with grey, the crests dark at tips. Fore wing purplish pink suffused with red-brown, the outer part of medial area pinker; subbasal line black defined by whitish on outer side, from costa to submedian fold; antemedial line brown defined by pink on inner side, angled outwards below costa, then oblique and slightly sinuous; claviform defined by a white striga at extremity with an oblong black-brown patch beyond it extending to postmedial line; orbicular and reniform with pink centres slightly defined by red-brown, the former with white bars at sides, rather elliptical, the latter with white bar on inner side and slightly angled inwards on median nervure, black-brown patches in cell before and between them; postmedial line double filled in with pink, slightly

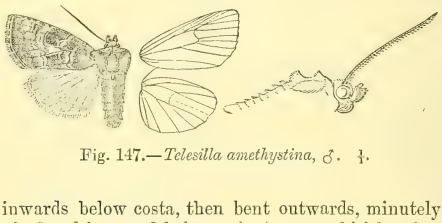


Fig. 147.—*Telesilla amethystina*, ♂. ½.

angled inwards below costa, then bent outwards, minutely dentate below vein 6 and incurved below vein 4, some whitish points beyond it on costa with black marks between them; subterminal line indistinct, pink defined by brown on inner side, excurved below vein 7 and at middle; a fine terminal whitish line; cilia brown mixed with pink and with a black line through them. Hind wing cupreous brown with a greyish tinge; an indistinct pale postmedial line somewhat incurved at vein 2; cilia grey-brown with a fine whitish line at base; the underside whitish thickly irrorated with brown, the terminal area suffused with brown, a brown discoidal spot and indistinct minutely waved curved postmedial line.

Hab. Britain, Buttermere (*Cannolds*), 1 ♂; France; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland, Frey Coll.; N. Italy; Balkan States; S.E. Russia; E. Siberia, Ussuri; Japan, Hakodaté (*Andrews*), 2 ♂, Tokio (*Maries*), 1 ♂,

1 ♀ ; Corea, Gensan (*Leech*), 2 ♀ ; W. China, Chang-yang (*Pratt*), 2 ♂. *Exp.* 34–40 millim.

Larva. Kirby, Butt. & Moths Eur. p. 266; Hffm. Raup. p. 131, pl. 34. f. 17. Green: dorsal and subdorsal lines white; lateral line white shading to red at extremities. Food-plants: the umbels of Wild Carrot and *Peucedanum palustre* and *P. silaus*. 7–8.

Genus **CALLOGONIA**, nov.

Type, *C. virgo*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching vertex of head and moderately fringed with hair in front, the 3rd moderate, porrect; frons smooth with tuft of hair; eyes large, round; antennæ of male laminate and almost simple; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; build slender; tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex somewhat produced, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3458. Callogonia virgo.

Abrostola virgo, Treit. Eur. Schmett. x. 2, p. 130 (1825); Frr. Neue Beitr. pl. 430. f. 2; Herr.-Schäff. Eur. Schmett., Noct. ff. 248–9; Friv. Tudon. Akad. Erkön. xi. iv. pl. 7. f. 5 (1866); Staud. Cat. Lep. pal. p. 235.

Placodes spencei, Boisd. Gen. & Ind. Meth. p. 129 (1840).

Head and thorax violaceous grey mixed with some red-brown; sides of palpi and frons tinged with rufous; tegulæ slightly tipped with red-brown; abdomen grey slightly tinged with rufous. Fore wing violaceous grey slightly irrorated with red-brown; antemedial line strong, whitish, defined on inner side with red-brown below submedian fold, very oblique and slightly sinuous, angled outwards above inner margin to the medial shade; medial area suffused with

Fig. 148.—*Callogonia virgo*, ♂. ½.

red-brown to median nervure; orbicular with grey centre and pinkish-white annulus defined by brown, oblique elliptical; reniform a very oblique pinkish-white bar defined on each side by brown lines; a very oblique diffused brown medial shade from lower angle of cell to the antemedial line above inner margin; postmedial line brown defined on outer side by pinkish white, double at costa and from vein 5 to inner margin, strongly angled outwards below costa, then oblique and slightly excurved at middle,

some whitish points beyond it on costa; terminal area suffused with red-brown; subterminal line pinkish white, oblique, angled outwards at vein 7 and very slightly excurved at middle; a fine red-brown terminal line; cilia grey with a pinkish-white line at base. Hind wing whitish tinged with brown, the terminal area suffused with brown; cilia white; the underside white irrorated with red-brown, a brown discoidal spot, indistinct curved postmedial line, and diffused subterminal band.

Hab. Hungary; ? N. Italy; Russia, Urals, 1 ♂, 1 ♀, Leech Coll.; E. Siberia, Amur, 1 ♂, 1 ♀, Ussuri; Japan, Yesso (*Pryer*), 2 ♂; Corea, Gensan (*Leech*), 1 ♂, 2 ♀. *Exp.* 34–36 millim.

Genus **PLUSILLA**.

Type.

Plusilla, Staud. Rom. Mém. vi. p. 533 (1892) ..... *rosalia.*

Proboscis aborted, minute; palpi upturned, the 2nd joint slender and reaching vertex of head, the 3rd moderate; frons smooth; eyes large, round; antennæ of male somewhat laminated and ciliated; thorax clothed almost entirely with scales and without crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen not crenulate, evenly curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3459. **Plusilla rosalia.**

Plusilla rosalia, Staud. Rom. Mém. vi. p. 533, pl. 9. f. 11 (1892); id. Cat. Lep. pal. p. 235.

Head and thorax rufous with a pinkish tinge; fore and mid tarsi dark brown ringed with yellowish white; abdomen ochreous white slightly tinged with rufous. Fore wing rufous strongly tinged with pink; antemedial line indistinct, very oblique, sinuous; an oblique somewhat sinuous medial black line defined by yellowish white on inner side from subcostal nervure to submedian fold, with deep rufous suffusion beyond it; postmedial line with oblique band

Fig. 149.—*Plusilla rosalia*, ♂. ½.

of rufous suffusion from costa to vein 6, then pale golden yellow defined on each side by very slightly waved black lines, obliquely excurved to below vein 3 where it is angled inwards, outwardly oblique to submedian fold, then obsolescent and slightly angled on vein 1; a fine dark terminal line. Hind wing yellowish white, the terminal area slightly tinged with pinkish; some brown irroration below and beyond end of cell; a faint dark discoidal lunule

and sinuous postmedial line; the underside yellowish white, the costal area tinged with pink, a slight dark discoidal lunule.

Hab. E. SIBERIA, Ussuri; C. CHINA, Shanghai (*Pryer*), 1 ♂, Ichang (*Pratt*), 1 ♀, Chang-yang (*Pratt*), 1 ♀. *Exp.* 28–30 millim.

Genus **ACHERDOA.**

	Type.
Acherdoa, Wlk. xxxii. 451 (1865)	*ferraria.*
Varina, Neum. Papilio, iv. p. 94 (1884)	*ferraria.*

Proboscis aborted, minute; palpi obliquely upturned, the 2nd joint short, rather broadly scaled, the 3rd moderate; frons smooth; eyes large, round; antennæ of male bipectinate with long branches to apex; thorax clothed chiefly with rough scales and without crests; tibiæ fringed with long hair on outer side; abdomen with dorsal series of crests, large on medial segments. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3460. Acherdoa ferraria.

Acherdoa ferraria, Wlk. xxxii. 451 (1865); Dyar, Cat. Lep. N. Am. p. 195.
Varina ornata, Neum. Papilio, iv. p. 94 (1884).

Head and thorax rufous mixed with some yellowish white; palpi blackish at sides; frons with lateral black bars; tegulæ black at base; tarsi whitish; abdomen black-brown, the anal tuft rufous. Fore wing bright rufous, the medial area with the cell and area just below it and beyond the reniform suffused with black, the terminal area greyish brown; subbasal line represented by a black striga from costa, a short black streak below base of cell; antemedial line defined by pure white on inner side, oblique, excurved below cell and slightly above inner margin; orbicular and reniform with

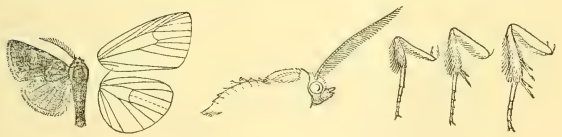


Fig. 150.—*Acherdoa ferraria*, ♂. ½.

rufous centres and white annuli defined by black, the former minute, round; postmedial line from costa to vein 3, double filled in with rufous, strongly bent outwards below costa, excurved to vein 6, then oblique, below vein 3 pure white, strong and bent outwards to vein 1 near tornus, some pale points beyond it on costa; subterminal line indistinct, whitish, slightly excurved below vein 7 and at middle and with triangular black spots on its inner side

below veins 4 and 3, terminating at vein 2; a terminal series of black striæ slightly defined by white on inner side; cilia rufous. Hind wing uniform black-brown; the underside with the termen greyish with terminal series of black striæ.

Hab. U.S.A., Florida (*Doubleday*), 3 ♂ type. *Exp.* 26–28 millim.

Genus **FAGITANA**.

	Type.
Fagitana, Wlk. xxxii. 645 (1865)	*littera.*
Pseudolimacodes, Grote, Pr. Ac. Philad. 1874, p. 212	*littera.*
Virgo, Staud. Rom. Mém. vi. p. 467 (1892)	*datanidia.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching vertex of head and moderately fringed with scales in front, the 3rd rather long; frons smooth; eyes large, round; antennæ of male serrate; thorax clothed with hair and hair-like scales and without crests; tibiæ moderately fringed with hair; abdomen with dorsal crests on basal segments. Fore wing with the apex rectangular, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base only.

A. Fore wing with the reniform represented by a white bar bent inwards on median nervure ..... *littera.*
B. Fore wing with the reniform represented by a rufous bar defined on each side by pink ..... *datanidia.*

3461. Fagitana littera.

Leucania littera, Guen. Noct. i. p. 71 (1852); Grote, Ill. Essay, p. 41; Smith, Cat. Noct. N. Am. p. 356.
Fatigana lucidata, Wlk. xxxii. 645 (1865).
Pseudolimacodes niveicostatus, Grote, Proc. Ac. Nat. Sci. Philad. 1874, p. 212.

Head bright rufous; antennæ, thorax, and abdomen whitish tinged with rufous. Fore wing whitish tinged with rufous, the costal half to beyond the cell, a diffused medial band, and the terminal area bright rufous leaving the costal edge white to near

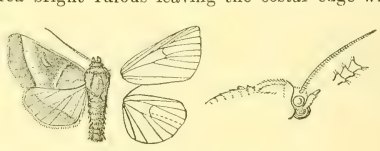


Fig. 151.—*Fagitana littera*, ♂. ½.

apex; antemedial line rufous defined by white on outer side, obliquely curved; a white discoidal bar curved inwards on extremity of median nervure; postmedial line unusually near termen, rufous defined by white suffusion on inner side, obliquely curved; a whitish terminal line; cilia deep rufous at base, whitish at tips. Hind

wing whitish suffused with bright rufous; a rather diffused obliquely curved rufous line from apex to inner margin before tornus; a fine rufous terminal line slightly defined by white on inner side; cilia whitish; the underside whitish tinged with rufous, a rufous discoidal bar and obliquely curved postmedial band diffused on outer side.

Hab. U.S.A., Massachusetts, New York, 1 ♂, Illinois, Florida (*Doubleday*), 2 ♀ type and type *lucidata*. *Exp.* 34–42 millim.

3462. Fagitana datanidia. (Plate CXXI. fig. 20.)

Nephelodes datanidia, Butl. Cist. Ent. iii. p. 132 (1885).
Nonagria amœna, Staud. Stett. ent. Zeit. 1888, p. 254; id. Cat. Lep. pal. p. 187.

Head and thorax rufous mixed with whitish; abdomen greyish suffused with rufous. Fore wing pale pink suffused with rufous; antemedial line whitish slightly defined on each side by rufous, somewhat inwardly oblique and very minutely waved; a slightly incurved whitish medial line with diffused rufous band on its outer edge; reniform represented by an oblique rufous bar slightly defined on each side by pink; postmedial line whitish defined on each side by rufous, slightly bent outwards below costa, then oblique; the terminal area rather deeper rufous with traces of a pale subterminal line; a fine brown terminal line. Hind wing white slightly tinged with brown; traces of an oblique discoidal bar and curved postmedial line; the underside with the costal area tinged with rufous.

Hab. E. Siberia, Amurland, Ussuri in Coll. Püngeler; Japan, Yokohama (*Pryer*), 2 ♂, 1 ♀ type. *Exp.* 30 millim.

Genus PHUPHENA.

Type.
Phuphena, Wlk. xv. 1845 (1858) ..... *fusipennis*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and broadly scaled in front, the 3rd short; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed chiefly with scales and without crests; tibiæ fringed with rather long hair; abdomen smoothly scaled and without crests. Fore wing with the apex slightly produced; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only; the termen excised at discal fold.

Sect. I. Fore wing with the termen rather strongly excised from apex to vein 4 where it is angled outwards, then crenulate.

3463. Phuphena cilix.

Drobeta cilix, Druce, Biol. Centr.-Am., Het. ii. p. 493, pl. 95. f. 8 (1898).

♂. Head and thorax bright rufous; vertex of head with white line; tegulæ at tips and metathoracic scales at extremities white; pectus and legs rufous mixed with white; abdomen rufous with black suffusion on middle of dorsum. Fore wing bright rufous slightly

irrorated with whitish, the apical area rather darker; subbasal line represented by a whitish striga from costa; antemedial line whitish defined by brown on outer side, somewhat oblique and almost straight; orbicular and reniform defined by whitish, the former elliptical and touching the antemedial line, the latter angled inwards on median nervure to near orbicular; postmedial line double, red-brown filled in with whitish, bent outwards below costa, oblique

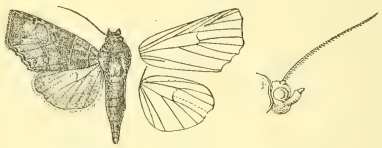


Fig. 152.—*Phuphena cilix*, ♂. $\frac{3}{2}$.

from vein 5 to submedian fold, then outwardly oblique, some white points beyond it on costa; subterminal line whitish defined by brown on outer side, represented by small lunules between veins 8 and 7, oblique from postmedial line at vein 6 to termen at vein 3, then strongly incurved and ending on termen at vein 1; a fine white terminal line; cilia with some whitish points at middle. Hind wing bright rufous, the cilia white with slight rufous points at base. Underside of fore wing with wedge-shaped white mark on costa at postmedial line, the terminal area whitish; hind wing whitish, the costal area and submedian fold tinged and irrorated with rufous, a brown discoidal spot, irregular waved postmedial line, and terminal series of small black lunules from apex to vein 2.

Hab. Panama, Bugaba (*Champion*), 1 ♂ type Godman-Salvin Coll. *Exp.* 28 millim.

Sect. II. Fore wing with the termen slightly excised below apex and angled at vein 4.

A. Fore wing with the postmedial line oblique from costa to submedian fold, the subterminal line oblique throughout..... *fusipennis.*
B. Fore wing with the postmedial line slightly excurved below costa, the subterminal line excurved at middle.
a. Fore wing with oblique medial shade from costa at antemedial line to inner margin at postmedial line ..... *diagona.*
b. Fore wing without medial shade ..... *transversa.*

3464. Phuphena fusipennis.

Phuphena fusipennis, Wlk. xv. 1846 (1858).
Perigea trilinea, Schaus, Trans. Am. Ent. Soc. xxi. p. 230 (1894).

♂. Head and thorax bright rufous; pectus and legs paler rufous; abdomen whitish suffused with rufous. Fore wing reddish ochreous suffused with rufous and irrorated with red-brown, the terminal

area rather paler, the medial area rather darker; antemedial line strong, dark brown defined by whitish on inner side, oblique, straight; orbicular absent; reniform very faintly defined by brown and with slight red-brown lunule in centre; postmedial line strong, dark red-brown defined by whitish on outer side, slightly excurved

Fig. 153.—*Phuphena fusipennis*, ♂. ½.

below costa, then very obliquely incurved and bent outwards to inner margin; subterminal line strong, dark red-brown, diffused on inner side, oblique, straight; a terminal series of dark red-brown striæ; cilia pale reddish at base, dark red-brown at tips. Hind wing whitish strongly suffused with cupreous brown, the terminal area deep red-brown; cilia whitish with a red-brown line through them; the underside white tinged with rufous and irrorated with red-brown except on inner area.

Hab. Brazil, Rio Janeiro, type † in Mus. Oxon.; São Paulo (*D. Jones*), 2 ♂. *Exp.* 30 millim.

3465. Phuphena diagona, n. sp. (Plate CXXI. fig. 21.)

Head and thorax bright rufous; antennæ ringed with white; tegulæ tipped with white; palpi whitish in front; pectus whitish; legs pale rufous; abdomen whitish suffused with rufous and with brown segmental lines. Fore wing greyish tinged with rufous and thickly irrorated with chocolate-brown; a diffused chocolate-brown subbasal band from costa to vein 1; antemedial line chocolate-brown defined by white on inner side, inwardly oblique, straight; orbicular represented by a pinkish-white bar across cell; reniform with brown centre and pinkish-white annulus defined at sides by brown, open above and below; an outwardly oblique chocolate-brown band from middle of costa to inner margin at postmedial line, which is chocolate-brown defined by white on outer side, arising from below costa, slightly excurved to vein 4, then incurved; a faint whitish subterminal band angled outwards at vein 4, defined on inner side by a slight chocolate-brown line expanding into spots below costa and at middle; a chocolate-brown terminal line slightly defined by whitish on inner side; cilia whitish tinged with rufous and with red-brown line through them. Hind wing whitish strongly suffused with cupreous red; traces of a discoidal striga and curved postmedial line; a red-brown terminal line; cilia white tinged with rufous; the underside white tinged with red and irrorated with red-brown

except on inner area, a small discoidal spot, sinuous postmedial line, and terminal series of slight lunules from apex to vein 2.

Hab. Br. Guiana, Rockstone (*Kayé*), 1 ♂, 1 ♀ type. *Exp.* 26 millim.

3466. **Phuphena transversa.** (Plate CXXI. fig. 22.)

Perigea transversa, Schaus, Trans. Am. Ent. Soc. xxi. p. 230 (1894).

Head and thorax bright rufous; tegulæ faintly tipped with whitish; pectus whitish; legs pale rufous; abdomen greyish suffused with rufous, the medial dorsal area black, the ventral surface red, white at base. Fore wing violaceous grey tinged with rufous and with slight dark irroration, the medial and postmedial areas chocolate-brown; antemedial line double filled in with violaceous grey, oblique, straight; orbicular absent; reniform with violaceous grey annulus defined by red-brown and with slight grey striga in centre; postmedial line double, red-brown filled in with violaceous grey, bent outwards below costa, excurved to vein 5, then incurved and bent outwards to inner margin, some minute white points beyond it on costa; a subterminal series of small dark brown spots slightly incurved at discal fold and below vein 3; a slight chocolate-brown terminal line; cilia violaceous grey with a chocolate-brown line through them. Hind wing dark red-brown; cilia violaceous grey with a dark brown line through them; the underside white, the costal area rufous, the terminal area slightly irrorated with purple-brown, a dark discoidal point, indistinct waved postmedial line, and terminal series of slight lunules from apex to vein 2.

Hab. Brazil, São Paulo (*D. Jones*), 2 ♂, Castro Paraña (*D. Jones*), 1 ♂, 2 ♀. *Exp.* 32 millim. Type † in U.S. Nat. Mus.

Larva. Pale yellow-green with rather darker dorsal and subdorsal lines; head ochreous; prolegs all fully developed.

Pupa in a cocoon of silk and grass among leaves.

Sect. III. Fore wing with the termen evenly curved.

A. Fore wing with the subterminal line white defined on inner side by a dark brown band and acutely angled outwards at middle ..... *petrovna.*

B. Fore wing with the subterminal line not white defined on inner side by a dark brown band.

a. Fore wing with the subterminal line entire, angled outwards at vein 7 and excurved at middle ..... *u-alba.*

b. Fore wing with the subterminal line represented by a series of small dark spots.

*a*¹. Fore wing with the ante- and postmedial lines strong, white ..... *paralella.*

*b*¹. Fore wing with the ante- and postmedial lines double, rufous filled in with whitish.

*a*². Fore wing with the subterminal series of spots defined by white on inner side ..... *tura.*

*b*². Fore wing with the subterminal series of spots not defined by white on inner side ..... *obliqua.*

3467. Phuphena petrovna. (Plate CXXI. fig. 23.)

Leptina petrovna, Schaus, Trans. Am. Ent. Soc. xxx. p. 152 (1904).

Head and thorax violaceous grey mixed with chocolate-brown; palpi chocolate-red; shoulders streaked with chocolate-brown; femora chocolate-red; abdomen white banded with chocolate-red, the ventral surface tinged with chocolate. Fore wing violaceous grey irrorated with chocolate-brown; antemedial line red-brown defined by white on inner side, angled outwards below costa, very oblique to just below median nervure, then very oblique inwardly to inner margin, a wedge-shaped chocolate-brown patch before it above inner margin; orbicular white with slight greyish centre, very narrow and oblique wedge-shaped, its lower extremity produced to the reniform, which is narrow and oblique, its centre grey slightly defined by brown, the triangular area between the stigmata suffused with chocolate; a diffused oblique chocolate medial shade from lower angle of cell to above inner margin; postmedial line double, red-brown filled in with white, excurved below costa, slightly incurved at discal fold, incurved below vein 4 and bent outwards to inner margin; subterminal line white, with a strong deep chocolate-brown band on inner side, oblique, acutely angled outwards at vein 4; a fine deep brown line just before termen, very slightly angled outwards at vein 6 and angled inwards at discal fold; cilia chocolate-brown. Hind wing white, the costal and terminal areas suffused with red; a red-brown terminal line; cilia white, tinged with red and with red-brown line through them from apex to vein 2; the underside white, the costal half suffused and irrorated with deep red, leaving a white fascia through the cell to termen and white streaks on the veins, the terminal line and line through the cilia deep red.

Hab. Brazil, Organ Mts., Tijuca (*Wagner*), 1 ♂, Rio Janeiro, 2 ♂, Petropolis (*Doer*), 1 ♂, São Paulo (*D. Jones*), 1 ♂, 1 ♀. *Exp.* 28–30 millim. Type † in U.S. Nat. Mus.

3468. Phuphena u-alba. (Plate CXXI. fig. 24.)

Ceramica u-album, Guen. Noct. i. p. 345 (1852); Smith, Cat. Noct. N. Am. p. 174.
Apamea purpuripennis, Grote, Proc. Ac. Nat. Sci. Phil. 1874, p. 206.
Orthosia baliola, Morr. Proc. Bost. Soc. N. H. xvii. p. 148 (1874).

Head and thorax red-brown mixed with greyish, the head deeper rufous, with a white line between antennæ which are whitish at base; abdomen pale rufous. Fore wing red-brown, suffused with purplish grey except on medial area in, below, and beyond cell; subbasal line red-brown, waved, from costa to submedian fold; antemedial line red-brown, oblique, waved; claviform faintly defined by red-brown; orbicular represented by a whitish point slightly defined by red-brown in upper part of cell, the reniform by a

U-shaped white mark defined by red-brown; postmedial line indistinct, red-brown, bent outwards below costa, then dentate, oblique below vein 4 and incurved in submedian interspace, some pale points beyond it on costa; subterminal line greyish defined by red-brown on outer side, excurved below vein 7 and at middle and slightly angled inwards in submedian fold; a slight waved brown terminal line. Hind wing greyish suffused with red-brown; a faint minutely waved postmedial line and slight terminal line; cilia whitish tinged with rufous; the underside whitish suffused with bright rufous, a rather diffused curved brown postmedial line and fine terminal line.

Hab. U.S.A., Massachusetts, Newtownville, 1 ♀ type *purpuripennis*, New York, N. Indiana, 1 ♀, Illinois, Minnesota, Florida (*Doubleday*), 2 ♂ type. *Exp.* 34–40 millim.

3469. **Phuphena paralella.** (Plate CXXI. fig. 25.)

Fagitana paralella, Hmpsn. A. M. N. H. (7) xiv. p. 168 (1904).

Head and thorax bright rufous, the tegulæ tipped with white; abdomen whitish suffused with bright rufous. Fore wing bright rufous; subbasal line represented by an oblique white bar from cell to vein 1; antemedial line strong, white, inwardly oblique, from subcostal nervure to inner margin; an oblique white discoidal bar, slightly bent inwards on median nervure; postmedial line strong, white, oblique and slightly excurved, arising from just below costa; a subterminal series of minute rufous spots, slightly incurved between veins 7 and 4; a white line just before termen. Hind wing pale fiery red, whitish towards base; the underside whitish tinged with red.

Hab. Bahamas (*Bonhote*), 2 ♂, 2 ♀ type. *Exp.* 30 millim.

3470. **Phuphena tura.**

Dianthœcia tura, Druce, Biol. Centr.-Am., Het. i. p. 291, pl. 27. f. 19 (1889).

♂. Head and thorax bright rufous; abdomen pale rufous. Fore

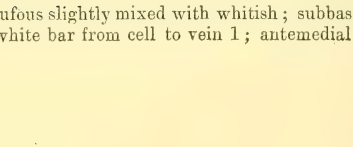


Fig. 154.—*Phuphena tura*, ♂. ½.

wing bright rufous slightly mixed with whitish; subbasal line represented by a white bar from cell to vein 1; antemedial line double,

red filled in with white, angled outwards below costa, then oblique; orbicular represented by a slight whitish bar; reniform white defined by red, V-shaped, open above; a diffused deep red medial oblique shade from outer edge of reniform to inner margin; postmedial line double, red filled in with white, arising just below costa, oblique and slightly sinuous; subterminal line represented by a series of small deep red spots defined on inner side by a narrow white band, arising just below costa, oblique; a pure waved white line just before termen defined on outer side by a slight red-brown line; a fine red-brown terminal line; cilia white tinged with red at base and with red-brown line at middle. Hind wing red-brown; cilia white tinged with red at base; the underside whitish tinged with red and slightly irrorated with red-brown; a small brown discoidal spot and slight postmedial line bent outwards below costa, then waved and ending at discal fold, some brown points on termen towards apex.

Hab. Panama, Chiriqui (*Champion*), 2 ♂ type, Godman-Salvin Coll. *Exp.* 32 millim.

*3471. **Phuphena obliqua.** (Plate CXXI. fig. 26.)

Fagitana obliqua, Smith, J. N.Y. Ent. Soc. viii. p. 174 (1900); Dyar, Cat. Lep. N. Am. p. 179.

♀. Head and thorax bright red-brown; tegulæ tipped with whitish; abdomen paler red-brown with slight dorsal black bar on 1st segment and streak on 2nd, the ventral surface pale. Fore wing bright red-brown tinged with violaceous grey, the terminal area suffused with violaceous grey; subbasal line absent; antemedial line double filled in with greyish, inwardly oblique and slightly curved, from just below costa to inner margin; orbicular and reniform closely approximated, very narrow and inwardly oblique, with slight whitish annuli, the latter extending to below costa; an indistinct oblique red-brown line from lower angle of cell to inner margin; postmedial line indistinct, double filled in with greyish, bent outwards below costa and slightly incurved below vein 4, subterminal line represented by a series of small red-brown spots in the interspaces, slightly excurved below vein 7 and at middle; a series of slight dark lunules just before termen defined on inner side by slight violaceous grey lunules; a fine dark terminal line; cilia red-brown. Hind wing dark red-brown; cilia pale rufous; the underside whitish tinged with rufous and irrorated with brown.

Hab. U.S.A., Florida, Chokalo in Coll. J. B. Smith. *Exp.* 30 millim.

Genus **FRACARA**.

Type.
Fracara, Wlk. ix. 146 (1856)..... *viridata*.

Proboscis fully developed; palpi upturned, the 2nd joint moderately fringed with hair in front and reaching about to vertex of head, the 3rd rather long; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed chiefly with rough scales, the pro- and metathorax with spreading crests; build slender; tibiæ moderately fringed with hair; abdomen with dorsal series of crests, the crests on 3rd and 4th segments large. Fore wing with the apex rounded, the termen excised below apex, excurved at middle, then oblique; veins 3 and 5 from near angle of cell, 6 from upper angle; 7, 8, 9 stalked; 10, 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3472. Fracara viridata.

Noctua viridata, Stoll, Pap. Exot. iv. p. 44, pl. 311. f. D (1782).

♂. Head and thorax white mixed with greenish blue; pectus and legs white; abdomen white tinged with ochreous and dorsally with greenish blue at base. Fore wing whitish blue, the basal, medial, and postmedial areas suffused with green; antemedial line very indistinct, oblique from costa to submedian fold, then inwardly oblique; orbicular and reniform scarlet with white annuli, small,

Fig. 155.—*Fracara viridata*, ♂. $\frac{1}{1}$.

elliptical, closely approximated; postmedial line very indistinct, excurved from costa to vein 4, then incurved; subterminal line only defined by the contrast between the green and blue areas. Hind wing white, the terminal area faintly tinged with green from apex to vein 3; a faint discoidal bar and curved postmedial line; the underside with the discoidal bar and postmedial line more distinct, the latter waved and with a slight diffused line beyond it from costa to discal fold.

Hab. Surinam; Brazil, Rio Janeiro (*E. Wilson*), 1 ♂. *Exp.* 32 millim.

Genus **CHYTONIX**.

Type.
Chytonix, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 66 (1874)... *palliatricula*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to vertex of head and moderately fringed with hair in front, the 3rd short; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed chiefly with rough scales, the prothorax with spreading crest, the metathorax with

very large crest; build slender; tibiæ fringed with long hair, the spurs long; abdomen with dorsal series of crests, the crests on 3rd and 4th segments very large. Fore wing with the apex rounded, the termen slightly excised towards tornus and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from or from just below upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle, 8 anastomosing with the cell near base only.

SECT. I. Antennæ of male bipectinate with short branches; fore wing with the termen excised below apex and excurved at middle.

A. Fore wing with the orbicular and reniform green.
  a. Fore wing with the reniform angled inwards on median nervure and conjoined to the orbicular ..... *muscosa*.
  b. Fore wing with the reniform not angled inwards on median nervure ..... *rufescens*.
B. Fore wing with the orbicular and reniform indistinct, whitish ..... *ethela*.

*3473. Chytonix muscosa. (Plate CXXI. fig. 27.)

Cyrima muscosa, Schaus, Trans. Am. Ent. Soc. xxx. p. 152 (1904).

♂. Head, thorax, and abdomen whitish tinged with rufous; palpi blackish at sides except at tips; antennæ blackish. Fore wing ochreous white tinged with rufous and irrorated with a few blackish scales; subbasal line black, waved, from costa to submedian fold, with some pale yellow-green beyond it; antemedial line black, oblique, waved; orbicular and reniform pale yellow-green with slight whitish annuli, the former a narrow bar, the latter narrow and strongly constricted at middle, angled inwards on median nervure and conjoined to orbicular by a patch of pale yellow-green below the cell; a blackish medial shade, oblique from costa to reniform; postmedial line black, bent outwards below costa, then dentate, oblique below vein 5, some white points beyond it on costa with yellow-green streaks between them; subterminal line indistinct, blackish, dentate, with yellow-green patch beyond it at apex with slight blackish suffusion below it; a fine blackish terminal line; cilia pale rufous at base, blackish at tips. Hind wing ochreous white tinged with brown, the terminal area with fuscous; cilia white tinged with rufous; the underside white, the costal half irrorated with rufous and brown, the apical area tinged with pale yellow-green, a black discoidal spot, a slight postmedial line dentate towards costa, angled inwards and with black spot at discal fold, angled inwards in submedian fold.

Hab. MEXICO, Coatepec (*Schaus*), type †♂ in U.S. Nat. Mus. *Exp.* 30 millim.

3474. Chytonix rufescens, n. sp.

♀. Head, thorax, and abdomen ochreous mixed with rufous, white and a few fuscous scales; tarsi ringed with white. Fore wing greyish suffused with purplish rufous and irrorated with brown

and some white, vein 1 slightly streaked with green, the medial area green at inner margin ; subbasal line represented by an oblique black striga from costa ; antemedial line interrupted in places, oblique from costa to below cell, then very oblique to inner margin ; orbicular and reniform green defined by brown, the former a small rather triangular spot in upper part of cell, the latter figure-of-8-shaped ; a green spot defined by brown below the cell at origin of vein 2 ; an indistinct oblique dark bar from costa to reniform and indistinct oblique waved line from lower angle of cell to inner margin, where there is a white lunule on it ; postmedial line defined by ochreous on outer side, bent outwards below costa, then

Fig. 156.—*Chytonix rufescens*, ♀. ½.

minutely waved, oblique below vein 4, some white points beyond it on costa and some short black streaks on the veins ; an irregularly quadrate white subapical patch with the indistinct waved whitish subterminal line from it to inner margin ; the terminal area greyish ; cilia pale rufous with a slight brown line through them. Hind wing ochreous white suffused with brown ; a fine waved brown terminal line ; cilia ochreous white ; the underside white, the costal area irrorated with black and red, a black discoidal spot and curved dentate postmedial line produced to black points on the veins.

Hab. Brazil, Rio Janeiro, 1 ♀ type. *Exp.* 30 millim.

*3475. Chytonix ethela. (Plate CXXI. fig. 28.)

Ipimorpha ethela, Schaus, Trans. Am. Ent. Soc. xxx. p. 153 (1904).

♀. Head and thorax pale ochreous tinged with rufous, the head and tegulæ irrorated with some black scales ; abdomen pale ochreous dorsally suffused with brown, ventrally with rufous. Fore wing ochreous suffused with bright rufous and with slight dark irroration ; subbasal line represented by blackish striæ from costa and cell ; antemedial line blackish defined on inner side by pale ochreous, angled outwards below costa, excurved at median nervure, strongly angled inwards on vein 1 and bent outwards above inner margin ; orbicular represented by minute faint pale spots below subcostal and median nervures ; reniform faint, pale, slightly defined by brown, very narrow, strongly constricted at middle and angled inwards on median nervure ; medial line blackish, obliquely bent outwards from costa to beyond cell, then inwardly oblique, slightly

waved, and joining the antemedial line at vein 1; postmedial line fine, blackish defined by ochreous white on outer side, strongly bent outwards below costa, then dentate, oblique below vein 4, some white points beyond it on costa; subterminal line defined by blackish suffusion on inner side and with some whitish beyond it at costa, angled outwards at vein 7 and excurved at middle; the veins of terminal area slightly streaked with black; a fine black terminal line. Hind wing ochreous suffused with dark brown; a fine dark terminal line; cilia white tinged with rufous; the underside ochreous white, the costal area irrorated with red and black, a slight black discoidal lunule and strongly dentate postmedial line.

Hab. Brazil, Castro Paraña (*D. Jones*), type †♀ in U.S. Nat. Mus. *Exp.* 32 millim.

Sect. II. Antennæ of male ciliated.

A. Fore wing with the termen somewhat excised below apex and excurved at middle.
  a. Fore wing greenish grey irrorated with black..... *chucha.*
  b. Fore wing greenish ochreous suffused with blue-grey ... *glaucescens.*

*3476. Chytonix chucha. (Plate CXXI. fig. 29.)

Ipimorpha chucha, Schaus, Trans. Am. Ent. Soc. xxx. p. 153 (1904).

♂. Head and thorax greenish grey mixed with some rufous and black scales; pectus and legs whitish tinged with red-brown, the tarsi brown ringed with white; abdomen whitish tinged with brown. Fore wing greenish grey irrorated with blackish; subbasal line indistinctly double, oblique, waved, from costa to inner margin; antemedial line indistinct, blackish, defined on inner side by white at costa, excurved and waved from costa to submedian fold, then incurved: orbicular white tinged with brown and defined by brown, very small and elliptical, with a similar round spot below it just below median nervure; reniform slightly defined by brown and with faint whitish annulus above and below, very narrow, strongly constricted at middle and somewhat produced at upper extremity; medial line indistinct, blackish, oblique from costa to reniform, oblique and minutely waved from cell to inner margin where there is a white striga on it; postmedial line black, defined on outer side by white at costa and inner margin, bent outwards below costa, then minutely dentate and produced to black and white points on the veins, excurved to vein 4, then oblique, some white points beyond it on costa with rufous streaks between them; subterminal line black with whitish patch beyond it at costa, waved, excurved below vein 7 and at middle and angled inwards in discal fold; a terminal series of black striæ; cilia ochreous, with black spots at tips at apex and middle. Hind wing ochreous white suffused with dark brown; cilia white tinged with rufous at base; the underside white, the costal area irrorated with red and black,

a blackish discoidal spot, irregularly dentate postmedial line, and fine terminal black line from apex to vein 2.

Hab. Brazil, Castro Paraña (*D. Jones*), type †♀ in U.S. Nat. Mus. *Exp.* 30 millim.

*3477. Chytonix glaucescens.

Chytonyx glaucescens, D. Jones, Trans. Ent. Soc. 1908, p. 158.

♂. Head and thorax greenish ochreous mixed with some black scales; pectus and legs whitish mixed with blackish; abdomen ochreous tinged with rufous. Fore wing greenish ochreous suffused with blue-grey and irrorated with black; subbasal line represented by an oblique black striga from costa; traces of an interrupted waved black antemedial line with black mark before it on inner margin; orbicular represented by a slight blackish mark; reniform blue-grey slightly defined by black; postmedial line represented by a double series of small black lunules, the outer series defined by white on outer side and with double white marks at inner margin,

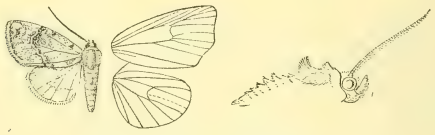


Fig. 157.—*Chytonix glaucescens*, ♂. ½.

bent outwards below costa, excurved to vein 5, then oblique, some white points beyond it on costa; an irregularly rounded white patch at apex with the indistinct waved whitish subterminal line from it to inner margin, excurved at middle; some slight black striæ on termen; cilia pale rufous, some of the scales tipped with black. Hind wing whitish suffused with brownish ochreous, the cilia whitish; the underside white, the costal area irrorated with black and some red, a black discoidal lunule, indistinct postmedial line oblique from costa to vein 3, then inwardly oblique, some black scales on termen.

Hab. Brazil, Castro Paraña, type † in Coll. D. Jones. *Exp.* 30 millim.

B. Fore wing with the termen not excised below apex.
  a. Fore wing green or more or less suffused with green.
    a^1. Fore wing with the ground-colour green.
      a^2. Fore wing with the antemedial line white, with two black points at costa..... *chlorophila.*
      b^2. Fore wing with the antemedial line black defined by white on inner side.
        c^3. Fore wing with the postmedial line not incurved at discal fold..... *griseorufa.*

b^3. Fore wing with the postmedial line slightly incurved at discal fold ..... *mniochroa.*
c^2. Fore wing with the antemedial line black, not defined by white on inner side ..... *melanochlora.*
b^1. Fore wing purplish grey suffused with black and in parts with green ..... *chlorostigma.*
b. Fore wing without green suffusion.
a^1. Fore wing with black streak in submedian fold from ante- to postmedial lines.
a^2. Fore wing with short white streak above extremity of the black streak before postmedial line.
a^3. Fore wing with the postmedial line oblique from vein 4 to just above inner margin.
a^4. Fore wing with the antemedial line moderately oblique and slightly angled outwards above inner margin ..... *palliatricula.*
b^4. Fore wing with the antemedial line very oblique and strongly angled outwards above inner margin ..... *parvimacula.*
b^3. Fore wing with the postmedial line oblique from vein 4 to 2, then erect ..... *sensilis.*
b^2. Fore wing with small white spot above extremity of the black streak before postmedial line.
a^3. Fore wing with the postmedial line dentate below vein 4 ..... *albonotata.*
b^3. Fore wing with the postmedial line not dentate below vein 4 ..... *nigribasalis.*
c^2. Fore wing without white mark above extremity of the black streak before postmedial line.
a^3. Fore wing with the medial area not dark red-brown below the black streak in submedian fold, the postmedial line oblique to inner margin..... *laticlavia.*
b^3. Fore wing with the medial area dark red-brown below the black streak in submedian fold, the postmedial line bent outwards to inner margin . *fodinæ.*
b^1. Fore wing without black streak in submedian fold from ante- to postmedial lines.
a^2. Fore wing with the medial area dark brown below the submedian fold ..... *albipuncta.*
b^2. Fore wing with dark fascia on inner margin on medial area ..... *excurvata.*
c^2. Fore wing without dark brown on inner medial area ..... *bogotica.*

*3478. Chytonix chlorophila. (Plate CXXI. fig. 30.)

Chytonix chlorophila, Druce, A. M. N. H. (8) i. p. 301 (1908).

♀. Head ochreous white; palpi irrorated with black; frons with lateral black points; antennæ black; thorax very pale green with a few black scales; pectus and legs white tinged with brown, the tibiæ banded with blackish, the tarsi black ringed with white; abdomen ochreous white irrorated with black towards extremity, the large crest tinged with green and tipped with brown. Fore wing very pale yellow-green; subbasal line represented by a black spot below costa and striga from cell defined by white on outer side, a slight blackish mark below it above inner margin; antemedial line very faint, whitish, curved, with two black points at costa and

black point beyond it representing the claviform; orbicular and reniform very faintly defined by white, the former round, the latter narrow, a black patch between them connected with the costa by two black bars; postmedial line indistinct, white, defined on inner side by black points from vein 5 to inner margin, oblique from costa to vein 5, then incurved, some white points with minute black streaks between them beyond it on costa; subterminal line indistinct, white, dentate, with patches of brown and black suffusion before and beyond it at discal and submedian folds; a terminal series of small rather triangular black spots defined on inner side by white; cilia rufous with slight brown line through them and brown marks at tips. Hind wing greyish suffused with fuscous brown; a terminal series of slight black lunules defined by whitish on inner side; cilia pale rufous; the underside white irrorated with brown, a black discoidal spot, diffused crenulate postmedial line, and terminal series of slight lunules.

Hab. Peru, S. Domingo (*Ockenden*), type †♀ in Coll. Druce. *Exp.* 34 millim.

3479. **Chytonix griseorufa**, n. sp. (Plate CXXI. fig. 31.)

♂. Head and thorax white mixed with grey-green and red-brown; palpi with the 2nd joint brown at sides; tegulæ with slight dark lines at middle and tips; tarsi fuscous ringed with white; abdomen whitish mixed with brown, the crests blackish, the anal tuft pale rufous. Fore wing whitish suffused with grey-green and with slight dark irroration; subbasal line black, from costa to vein 1, with some pinkish before it below the cell and a white bar beyond it with fuscous brown suffusion beyond it and on inner area; antemedial line indistinct, interrupted, defined by whitish on inner side, oblique from costa to below cell, then interrupted, orbicular represented by a pinkish patch; reniform a narrow fuscous bar defined by white; a diffused brown medial line oblique from costa to median nervure; postmedial line rather diffused, blackish defined by white on outer side, obliquely excurved from costa to vein 4, then incurved and with some blue-grey between the black and white lines in submedian interspace, some white points with minute black spots between them beyond it on costa; the terminal area suffused with rufous except at apex; a waved whitish subterminal line excurved below vein 7 and at middle; a terminal series of small black lunules; cilia rufous. Hind wing reddish brown, paler at base; cilia whitish tinged with rufous and with a slight brown line through them; the underside whitish tinged with rufous and irrorated with brown, a blackish discoidal spot and crenulate postmedial line excurved to vein 3, then incurved.

♀. Fore wing whiter, the reniform filled in with black.

Hab. Trinidad; Brazil, Rio Janeiro, 1 ♂ type. *Exp.* 30 millim.

3480. **Chytonix mniochroa**, n. sp. (Plate CXXI. fig. 32.)

♂. Head and tegulæ ochreous white slightly tinged with rufous, the latter with brown spots at middle and sides; thorax moss-green mixed with white and a few black scales; pectus and legs ochreous white; abdomen ochreous with dark brown bands on terminal segments, the crests white tipped with black-brown. Fore wing moss-green mixed with some white and irrorated and suffused in parts with red-brown and blackish; subbasal line brown, angled outwards in submedian fold and ending at vein 1, with a diffused blackish patch beyond it above inner margin; antemedial line blackish with a white band on its inner side, oblique towards costa, angled outwards on median nervure and above inner margin and incurved at vein 1; orbicular and reniform small, black, the former round, the latter elliptical, some brown suffusion between them and in submedian interspace below vein 2; postmedial line black, defined by white on outer side, bent outwards and the black obsolete below costa, then formed by small spots incurved at discal fold and below vein 4; subterminal line white, slightly defined on each side by brown suffusion except towards costa, minutely waved, excurved below vein 7 and at middle, with a patch of brown suffusion beyond it at discal fold; a terminal series of small black lunules; cilia red-brown. Hind wing fuscous brown, paler at base; a terminal series of small black lunules; cilia white mixed with brown, especially from apex to vein 2; the underside whitish tinged with ochreous, the costal and terminal areas irrorated with brown and the apical area suffused with brown, a black discoidal lunule, crenulate postmedial line bent outwards below costa and inwards below vein 3, and terminal series of small lunules.

Hab. Trinidad, Cuparo (*Kaye*), 2 ♂ type. *Exp.* 28 millim.

3481. **Chytonix melanochlora.** (Plate CXXII. fig. 1.)

Bryophila melanochlora, Hmpsn. Ann. S. Afr. Mus. ii. p. 289 (1902).

Head and thorax sap-green with a few brown scales; palpi white with black patches at sides of 1st and 2nd joints; sides of tegulæ and basal half of patagia with brown stripes; pectus and legs whitish tinged with brown and irrorated with crimson, the tibiæ and tarsi banded with black; abdomen brown. Fore wing sap-green irrorated with a few brown scales; a black fascia from base of costa bent outwards in cell and with a striga beyond it from costa; a wedge-shaped black fascia below base of cell; antemedial line double, indistinct, waved, with black spot on its outer edge at costa, oblique from costa to submedian fold, then erect; the medial area with diffused black and brown fascia above vein 1; orbicular absent, reniform hardly traceable; an indistinct waved curved medial line; some brown suffusion beyond lower angle of cell before the postmedial line, which is double, bent outwards below costa, excurved to vein 4, then incurved and minutely waved, some pale

points with brown between them beyond it on costa, two short black streaks below costa and two black streaks filled in with brown at discal fold extending to termen; traces of a curved punctiform subterminal line; a terminal series of black points; cilia mixed with fuscous at tips. Hind wing fuscous brown; an indistinct discoidal lunule; cilia fuscous and ochreous with ochreous line at base and ochreous patch at submedian interspace; the underside ochreous white irrorated with brown and suffused with crimson below costa towards apex, a black discoidal spot, postmedial line bent outwards below costa, then crenulate, and terminal series of black lunules.

Hab. Natal, Karkloof (*Marshall*), 1 ♀, Durban (*Leigh*), 1 ♂ type. *Exp.* 34 millim.

3482. Chytonix chlorostigma. (Plate CXXII. fig. 2.)

Hadena chlorostigma, Harv. Can. Ent. viii. p. 53 (1876); Smith, Cat. Noct. N. Am. p. 145.

♂. Head and thorax whitish mixed with brown and black; sides of palpi and frons blackish; tarsi black with pale rings; abdomen whitish mixed with fuscous leaving the base pale and white segmental rings. Fore wing purplish grey irrorated and suffused with black, the basal costal area, the inner medial area, and the terminal area suffused with sap-green; subbasal line waved, from costa to submedian fold; antemedial line double, filled in with white except at middle and with some white before it on inner margin, oblique, waved; claviform defined by black; orbicular and reniform green defined by black, the former small, round, the latter rather elliptical; an indistinct curved waved medial line; postmedial line double filled in with white on costal and inner areas, oblique from costa to vein 6, then dentate to vein 3 where it is slightly retracted, then excurved, some white points beyond it on costa; subterminal line only defined by diffused fuscous on its inner edge, excurved below vein 7 and at middle, a terminal series of small black lunules; cilia fuscous with a white line at base. Hind wing fuscous brown, the cilia white with fuscous tips; the underside white tinged with brown and irrorated with black, a black discoidal spot, crenulate postmedial line, diffused subterminal band, and fine waved terminal line.

Hab. U.S.A., Illinois, Texas, 2 ♂ type. *Exp.* 30 millim.

3483. Chytonix palliatricula.

Bryophila palliatricula, Guen. Noct. i. p. 26 (1852); Smith, Cat. Noct. N. Am. p. 50.
Apamea iaspis, Guen. Noct. i. p. 209 (1852).

(*iaspis*). Head and thorax grey mixed with red-brown and black; pectus whitish; tarsi black ringed with white; abdomen grey mixed with black. Fore wing grey irrorated with black, the basal area, the inner area to postmedial line, and terminal area at

middle and above tornus suffused with fuscous; subbasal line excurved at middle, from costa to vein 1; antemedial line bent outwards below costa, then oblique, slightly sinuous; a short white fascia in submedian fold before the postmedial line; orbicular and reniform large, pale tinged with brown and defined by black, the former oblique elliptical, the latter with some fuscous in lower part; a diffused medial fuscous bar from costa to between upper part of stigmata; postmedial line bent outwards below costa, then minutely dentate, oblique below vein 4; subterminal line ill-defined, white defined by fuscous and brown suffusion on inner side, dentate,

Fig. 158.—*Chytonix palliatricula*, ♂. ½.

angled inwards in discal and submedial folds, the veins beyond it with slight dark streaks; a terminal series of slight black lunules; cilia dark brown intersected with whitish. Hind wing pale suffused and irrorated with dark brown except on basal half of costal area; cilia whitish with a brown line through them; the underside whitish slightly irrorated with brown, a blackish discoidal lunule, sinuous postmedial line, and waved terminal line from apex to vein 2.

Ab. 1. *palliatricula*. Fore wing with the orbicular and reniform and the medial area from discal fold to submedian fold white.

Hab. CANADA (*Norman*), 1 ♂; U.S.A., Massachusetts, New York (*Doubleday*), 4 ♂ type and type *jaspis*, Evans Center (*Grote*), 2 ♂, 1 ♀, Pennsylvania, Philadelphia, 1 ♀, Illinois, Virginia, N. Carolina, Minnesota. *Exp.* 28–34 millim.

*3484. Chytonix parvimacula. (Plate CXXII. fig. 3.)

Chytonix parvimacula, Smith, J. N.Y. Ent. Soc. xi. p. 189 (1903).

Head and thorax dull fuscous brown mixed with paler and darker scales; abdomen pale brown. Fore wing dull fuscous brown, the basal and inner medial areas much darker; subbasal line double filled in with greyish, extending almost to inner margin; antemedial line black defined on inner side by whitish, very oblique from costa to vein 1, bent inwards to inner margin; claviform indicated by some greenish scales on its upper edge, a white streak from it to postmedial line with a black streak below it; orbicular and reniform with greyish annuli defined by black, the former oblique elliptical, the latter constricted at middle; postmedial line black defined on outer side by whitish, bent outwards below costa and oblique below vein 4, some white points beyond it on costa;

subterminal line pale, diffused, slightly defined on each side by greenish, angled outwards at veins 6, 4, 3; a terminal series of black striæ; cilia with a dark line through them. Hind wing fuscous brown; cilia paler; the underside whitish irrorated with fuscous; a dark discoidal lunule and postmedial line.

Hab. U.S.A., Middle California. *Exp.* 30 millim. This species is unknown to me; figured from a drawing from type in Coll. J. B. Smith.

3485. Chytonix sensilis. (Plate CXXII. fig. 4.)

Chytonyx sensilis, Grote, Papilio, i. p. 49 (1881); id. Ill. Essay, p. 51, pl. 1. f. 6; Smith, Cat. Noct. N. Am. p. 50.

♀. Head and thorax grey mixed with fuscous and red-brown; abdomen grey suffused with brown, the crests blackish. Fore wing grey suffused with dark brown and rufous, the inner medial area darker, the terminal area redder; subbasal line very obliquely incurved from costa to subcostal nervure where it is strongly angled outwards, then oblique to submedian fold in which there is a tuft of black scales beyond it; antemedial line obliquely excurved from costa to submedian fold, then slightly incurved and strongly excurved above inner margin; claviform narrow and elongate, faintly defined by a few black scales and with a white streak from it to postmedial line; orbicular and reniform grey defined by black, the former with some rufous in centre, rather quadrate and conjoined to antemedial line, the latter with some rufous on inner edge and fuscous spots in upper and lower parts; postmedial line defined by grey on outer side, strongly bent outwards below costa, sinuous to vein 3, then incurved, some grey points beyond it on costa; subterminal line only defined by diffused brown on inner side, somewhat dentate and angled outwards at veins 4, 3; a terminal series of small black lunules; cilia grey at base and brown at tips with slight dark medial line. Hind wing fuscous brown with a greyish tinge; a fine brown terminal line; cilia greyish with a brown line through them; the underside purplish grey thickly irrorated with brown, a black discoidal spot and diffused minutely waved postmedial line with brown suffusion on its outer edge.

Ab. 1. Fore wing without the white streak in submedian fold.

Hab. U.S.A., Massachusetts, 1 ♀ type, New York, New Jersey. *Exp.* 38 millim.

3486. Chytonix albonotata.

Bryophila albonotata, Staud. Rom. Mém. vi. p. 396, pl. 5. f. 9 (1892); id. Cat. Lep. pal. p. 165.

♀. Head and thorax white tinged with brown and mixed with black; palpi with black marks at sides of joints; frons with lateral black bars; tegulæ tipped with black; pectus white; tarsi blackish ringed with white; abdomen white irrorated with brown, the crests black. Fore wing grey suffused with red-brown and irrorated with black; subbasal line black, dentate, from costa to above inner

margin, with small black spot beyond it in submedian fold; antemedial line black, oblique, waved; the medial area with rather diffused black fascia below vein 1 ending in a pure white spot before postmedial line; orbicular and reniform very large, pale, defined by black, the former round, the latter somewhat constricted at middle and angled inwards on median nervure; a diffused oblique dark shade from costa to reniform; postmedial line double, black, dentate, oblique from costa to vein 6, inwardly oblique below vein 4, a dark shade beyond it on costal area with some white points on costa; subterminal line indistinct, pale, dentate, defined on inner side by two dentate black marks between veins 4 and 2 and on outer side by dark suffusion at discal fold where it is angled inwards; a terminal series of small black lunules. Hind wing white tinged with brown, the terminal area suffused with brown; traces of a dark discoidal lunule, curved postmedial line, and sinuous subterminal shade; a terminal series of dark striæ; cilia white tinged with brown at tips; the underside white irrorated with black, a black discoidal spot and traces of a diffused postmedial line.

Hab. E. Siberia, Ussuri; Japan, Nikko, in Coll. Püngeler. *Exp.* 30–40 millim.

3487. **Chytonix nigribasalis**, n. sp. (Plate CXXII. fig: 5.)

♂. Head and thorax red-brown mixed with grey; tegulæ dark brown at base and with dark brown medial line; abdomen grey suffused with brown, the anal tuft rufous. Fore wing with the basal area and inner area to postmedial line dark brown with a diffused blackish fascia above vein 1, the rest of wing grey-white irrorated and suffused with brown; subbasal line absent; antemedial line blackish, oblique from costa to submedian fold, then slightly incurved and very strongly angled outwards above inner margin, orbicular whitish slightly defined by dark brown, large, oblique elliptical; reniform with annulus formed of small white spots slightly defined by dark brown, constricted at middle; postmedial line slightly bent outwards below costa, excurved to vein 4, then oblique, with small white spot before it in submedian fold and black streak from it to termen below vein 4; traces of a pale waved subterminal line; cilia with a fine white line at base. Hind wing greyish uniformly suffused with brown; a slight dark discoidal lunule, indistinct curved postmedial line; cilia with a fine white line at base; the underside whitish, the costal and terminal areas irrorated with brown, a blackish discoidal lunule and rather diffused curved postmedial line.

Hab. W. China, Wa-ssu-kou, 1 ♂ type. *Exp.* 36 millim.

*3488. **Chytonix laticlava.** (Plate CXXII. fig. 6.)

Chytonix laticlava, Smith, J. N.Y. Ent. Soc. xi. p. 189 (1903).

Head and thorax dull grey mixed with brown, the tegulæ with dark medial line; abdomen whitish tinged with brown, the crests

brown. Fore wing pale grey, the medial area tinged with brown above the submedian fold; a wedge-shaped black streak below base of cell and a short streak on inner margin; subbasal line represented by double black points on the costa; antemedial line rather diffused, black, single, oblique from costa to submedian fold; claviform short and broad, defined by black, a black streak from its lower extremity to the postmedial line; orbicular and reniform large, pale, slightly defined by black, the former elliptical, the latter with darker centre; medial line represented by a black spot on costa; postmedial line double, blackish filled in with whitish, strongly bent outwards below costa, excurved to vein 4, then oblique; subterminal line indistinct, pale, irregular, angled inwards in discal and submedial folds where there are triangular patches of brown suffusion beyond it, dentate to termen at veins 4, 3; a lunulate terminal line; cilia with a dark line through them. Hind wing whitish tinged with brown; a slight curved postmedial line and fine terminal line; the underside with dark discoidal spot and postmedial line.

Hab. U.S.A., Washington, Pullman. *Exp.* 30 millim. This species is unknown to me; figured from a drawing from type in Coll. J. B. Smith.

3489. Chytonix fodinæ.

Miana fodinæ, Oberth. Ét. Ent. v. p. 73, pl. 3. f. 12 (1880); Staud. Cat. Lep. pal. p. 164.
Gerbatha subfasciata, Butl. Trans. Ent. Soc. 1881, p. 193.

Head, and thorax brown mixed with grey and some fuscous; palpi blackish; frons with lateral black bars; tegulæ with black line near tips; the crests rufous; pectus whitish, the tarsi black ringed with white; abdomen grey mixed with brown, the basal crest black, the medial crests rufous. Fore wing grey suffused with brown and tinged in parts with rufous, the inner area greyer, the inner medial area suffused with black and with deep black fascia above vein 1; subbasal line represented by a slight dark striga from costa; antemedial line double, the inner line indistinct, oblique to median nervure, then inwardly oblique and filled in with whitish; orbicular and reniform grey slightly defined by black at sides, the former oblique oblong, the latter somewhat constricted at middle; a slight black striga from middle of costa; postmedial line with slight double oblique dark striæ from costa, then represented by double black points on the veins to vein 3 and with incurved black line defined on outer side by white from lower angle of cell to inner margin, some whitish points beyond it on costa; subterminal line indistinct, whitish, angled outwards at vein 7 and excurved at middle; a black terminal line with slight white points at the extremities of the veins. Hind wing greyish suffused with brown; a fine dark terminal line from apex to vein 2; cilia white at tips and with brown line through them from apex to vein 2; the underside whitish, the costal area tinged with rufous and irrorated with brown, the terminal area suffused with brown,

a dark discoidal spot, sinuous postmedial line, and black terminal line from apex to vein 2.

Hab. E. Siberia, Ussuri, Askold I.; Japan, Hakodate (*Andrews*), 2 ♂, 2 ♀. Oiwake (*Pryer*), 1 ♀, Tokio (*Maries*), 2 ♀ type *subfasciata*, Yokohama (*Pryer*), 1 ♂. *Exp.* 24–26 millim.

3490. Chytonix albipuncta. (Plate CXXII. fig. 7.)

Bryophila albipuncta, Hmpsn. Moths Ind. ii. p. 299 (1894).

Head and thorax pale rufous mixed with brown; palpi blackish; tarsi banded with fuscous; abdomen greyish suffused with fuscous brown, the dorsal crests blackish. Fore wing rufous suffused with fuscous brown leaving the base, disk and terminal half of costal area more rufous; subbasal line represented by double black striæ from costa and cell: antemedial line blackish with more prominent black bar from costa, sinuous and oblique to submedian fold, then inwardly oblique; claviform defined by rather diffused black and somewhat acute at extremity; orbicular and reniform with fuscous centres and rufous annuli rather incompletely defined by black, the former oblique elliptical, the latter rather constricted at middle; an oblique medial black bar from costa; postmedial line indistinctly double filled in with rufous, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some pale points beyond it on costa, a prominent white point on vein 1 and slight points on veins 4, 3, 2; subterminal line very indistinct, ochreous, excurved below vein 7 and at middle; a terminal series of small black lunules and a fine ochreous line at base of cilia. Hind wing greyish suffused with brown; an indistinct discoidal spot; a fine brown terminal line; cilia pale with brown line at middle; the underside pale tinged with rufous and thickly irrorated with black, a black discoidal spot, waved postmedial line bent inwards to costa, and terminal series of striæ.

Hab. W. China, Chao-pin-sa, 1 ♂; Sikhim (*Möller*), type † ♀ in Coll. Rothschild. *Exp.* 30 millim.

3491. Chytonix excurvata. (Plate CXXII. fig. 8.)

Bryophila excurvata, Hmpsn. J. Bomb. Soc. xi. p. 445 (1897).

♀. Head and tegulæ white mixed with some brown; thorax brown mixed with some white; tarsi brown with slight pale rings; abdomen whitish irrorated with brown. Fore wing ochreous white tinged in parts with rufous, the basal area and a large patch beyond the cell suffused with dark brown; an oblique black subbasal line from costa to submedian fold defined by whitish on outer side; antemedial line black slightly defined by whitish on inner side, obliquely incurved from costa to middle of inner margin and with a curved brown fascia beyond it on inner margin; orbicular small, round, with faint white annulus and a few brown scales in centre; reniform with brown centre and white annulus, constricted at middle, a black patch beyond it followed by brown suffusion which

is darkest at middle, slighter on costal area and towards vein 2; postmedial line indistinctly double filled in with whitish, strongly bent outwards below costa, then minutely dentate, excurved to vein 3 near termen, then oblique, some cupreous brown suffusion beyond it except on inner area and some white points on costa, the apex brownish; a triangular black patch on termen below apex extending to the postmedial line at vein 6; a terminal series of black striæ; cilia blackish with fine white line at base. Hind wing pale suffused with purplish brown; an indistinct dark discoidal lunule; cilia white with a brown line through them; the underside purplish grey irrorated with brown, a blackish discoidal lunule, postmedial line excurved and crenulate to vein 3, then incurved, some blackish lunules on termen.

Hab. Sikhim, 1800′ (*Dudgeon*), 1 ♀ type. *Exp.* 30 millim.

3492. **Chytonix bogotica.** (Plate CXXII. fig. 9.)

Bryophila bogotica, Wlk. xxxv. 1951 (1866).

♂. Head and thorax grey mixed with brown and black; tarsi blackish with pale rings; abdomen grey irrorated with brown, the crests blackish. Fore wing grey irrorated with brown and black; subbasal line whitish, defined on each side by black scales and with black patches before and beyond it in submedian interspace, oblique, waved, extending to inner margin; antemedial line double, black filled in with whitish, oblique, waved; claviform represented by a minute white spot at its extremity defined by black; orbicular and reniform whitish defined by black and with some brown in centres, the former oblique elliptical, some black suffusion before, between, and beyond them; postmedial line black defined by whitish on outer side, strongly bent outwards below costa, then minutely dentate, excurved to vein 4, then strongly incurved and again excurved at vein 1, some slight pale points beyond it on costa; an oblique pale fascia from apex to postmedial line, the pale subterminal line arising from it and slightly excurved at middle; a terminal series of black points defined on inner side by a pale waved line. Hind wing white tinged with brown especially on terminal area; the underside white irrorated with black-brown, a black discoidal lunule and curved waved postmedial line.

Hab. Colombia, Bogotá (*Stevens*), 1 ♂ type. *Exp.* 26 millim.

Genus **PSEUDERASTRIA**, nov.

Type, *P. larentica*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching vertex of head and moderately scaled, the 3rd rather long, porrect; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed chiefly with scales, the prothorax without crest, the metathorax with spreading crest; build slender; tibiæ slightly fringed with hair; abdomen with dorsal crests on basal segments. Fore wing with the apex rectangular, veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell; male with a fovea in cell before middle covered by a valve of scales from median nervure on upperside. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3493. Pseuderastria larentica.

Amyna larentica, Hmpsn. Moths Ind. ii. p. 252 (1894).

Head and thorax black-brown mixed with some purplish pink; pectus and legs brownish; the tarsi blackish with pale rings; abdomen black mixed with some purplish pink. Fore wing greyish suffused with fuscous and irrorated with black and a few purplish-pink scales, the terminal area largely suffused with pink; subbasal line black, waved, from costa to submedian fold; antemedial line indistinct, oblique, waved; orbicular a minute reddish spot defined by black, round, very widely separated from the reniform which has a red centre with some blackish at upper and lower extremities and pale annulus slightly defined by black, very narrow and constricted at middle; traces of a diffused black medial line; postmedial line black defined by greyish on outer side, bent outwards

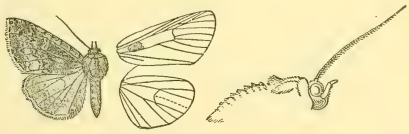


Fig. 159.—*Pseuderastria larentica*, ♂. ½.

below costa, then dentate, incurved below vein 4, some pink points beyond it on costa; subterminal line black, defined on each side by pink suffusion, excurved below vein 7 and at middle; a terminal series of small black lunules slightly defined by pink on inner side; cilia blackish with a fine pale line at base. Hind wing fuscous; an indistinct minutely waved postmedial line defined by greyish on outer side; a fine dark terminal line with slight pale lunules before it; cilia with series of pale points at base; the underside greyish thickly irrorated with dark brown, an oblique medial line and rather diffused postmedial line excurved at middle.

Hab. Bhután (*Dudgeon*), 1 ♀; Assam, Nága Hills (*Doherty*), type † ♂ in Coll. Rothschild. *Exp.* ♂ 28, ♀ 34 millim.

Genus BRYOMŒA.

Type

Bryomoia, Staud. Rom. Mém. vi. p. 397 (1892) ..... *melachlora*.

Proboscis aborted, minute; palpi upturned, slender, the 2nd joint reaching to about middle of frons, the 3rd long; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed chiefly with scales, the prothorax without crest, the metathorax with spreading crest; build slender; tibiæ moderately fringed with hair; abdomen with dorsal series of crests. Fore wing rather broad, the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form a small areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

*3494. Bryomœa melachlora.

Bryomoia melachlora, Staud. Rom. Mém. vi. p. 397, pl. v. f. 10 (1892); id. Cat. Lep. pal. p. 167.

♂. Head blackish; thorax blackish mixed with whitish; pectus white; fore and mid legs brown and white, hind legs white, the tarsi blackish ringed with white; abdomen white irrorated with blackish. Fore wing with the basal half black-brown, the terminal half white irrorated with a few black scales; a white spot in base of cell; subbasal line black defined on outer side by pale yellow-green, waved, from costa to vein 1, a green streak beyond it in submedian fold; antemedial line black defined on inner side by pale yellow-green, waved; orbicular with black-brown centre and white annulus incomplete above and below, large, round; reniform

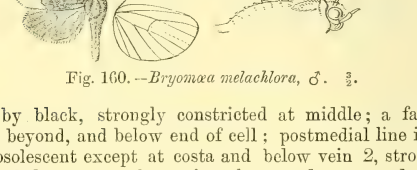


Fig. 160.—*Bryomœa melachlora*, ♂. ⅔.

defined by black, strongly constricted at middle; a faint green tinge in, beyond, and below end of cell; postmedial line indistinct, black, obsolescent except at costa and below vein 2, strongly bent outwards below costa, then minutely waved, excurved to vein 4, then strongly incurved, a slight brown shade on costa towards apex; subterminal line represented by a slight striga from costa, then by a series of slight streaks. Hind wing whitish suffused with fuscous brown leaving some whitish on termen except towards apex; cilia white mixed with some fuscous; the underside white irrorated with fuscous, a black discoidal lunule, diffused postmedial line oblique from costa to vein 6, then inwardly oblique, and traces of subterminal shade.

Hab. E. Siberia, Ussuri, Kasakewitsch in Coll. Püngeler. *Exp.* 22 millim.

Genus **MIONIDES.**

Type.

Mionides, Hmpsn. Ann. S. Afr. Mus. ii. p. 281 (1902) ..... *lichenea.*

Proboscis absent; palpi slender, obliquely porrect, extending to just beyond frons and fringed with hair below; frons with rounded prominence with corneous plate below it; eyes large, round; antennæ of male with fascicles of long cilia; thorax clothed chiefly with scales and without distinct crests; build slender; tibiæ moderately fringed with hair; abdomen with dorsal crests on basal segments. Fore wing long and narrow, the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 strongly stalked; 8 anastomosing with the cell near base only.

3495. Mionides lichenea.

Mionides lichenea, Hmpsn. Ann. S. Afr. Mus. ii. p. 281 (1902).

♂. Head and thorax white slightly tinged with olive and mixed with black; abdomen whitish dorsally suffused with brown. Fore wing white faintly tinged with olive and thickly irrorated with black; subbasal line ill-defined, black, from costa to submedian fold; antemedial line ill-defined, white, irregularly waved and almost erect; orbicular small, round, with white centre defined by diffused black; reniform a very small whitish lunule defined by black; postmedial line black defined by white on outer side, bent outwards below costa, then minutely waved, excurved to vein 4, then obliquely incurved to inner margin near antemedial line,

Fig. 161.—*Mionides lichenea*, ♂. ½.

some white points beyond it on costa; subterminal line represented by some very ill-defined black marks excurved below vein 7 and at middle; cilia white mixed with black and with a series of white points at base. Hind wing white suffused and irrorated with fuscous bown; cilia white with a slight dark line near base; the underside whitish tinged with brown and slightly irrorated with black, a large discoidal spot and indistinct diffused postmedial line.

Hab. Natal, Estcourt (*Hutchinson*), 1 ♂ type; C. Colony, Kokstad (*Mrs. Pringle*), 1 ♂. *Exp.* 28–30 millim.

Genus **POLIOBRYA**, nov.

Type, *P. patula*.

Proboscis absent; palpi slender, porrect, to just beyond frons which is smooth; eyes large, rounded; antennæ of male ciliated; build slender; head and thorax clothed chiefly with rather rough scales and without crests; tibiæ fringed with hair on outer side; abdomen elongate, slender, with small crest at base and large crests on three following segments. Fore wing rather elongate, the termen obliquely curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

*3496. Poliobrya patula.

Bryophila patula, Püng. Iris, xix. p. 217, pl. 8. f. 14 (1906).

♂. Head and thorax clothed with grey, brown, and black scales; abdomen grey tinged with brown and mixed with fuscous, the dorsal crests blackish. Fore wing whitish tinged with ochreous

and thickly irrorated with black; subbasal line black, rather diffused, curved, from costa to vein 1; antemedial line black, rather diffused, defined by diffused white on inner side except towards costa, oblique, somewhat dentate and angled outwards in submedian interspace; claviform absent; orbicular and reniform moderate, fuscous defined by blackish, the former round; traces of a medial shade oblique from costa to median nervure, then incurved; postmedial line black, rather diffused, defined on outer side by diffused white except towards costa, strongly bent outwards below costa,

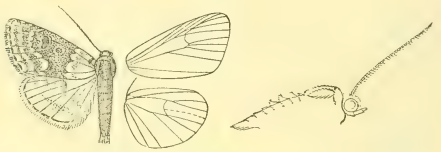


Fig. 162.—*Poliobrya patula*, ♂. ½.

then minutely dentate, slightly incurved at discal fold and strongly below vein 4, bent outwards to inner margin, some white points beyond it on costa; subterminal line whitish defined on inner side by diffused rather dentate blackish marks, angled outwards at vein 7 and slightly excurved at middle; a terminal series of black striæ with small white lunules before them; cilia whitish mixed with fuscous and with blackish line through them. Hind wing white tinged with brown especially on basal half; an oblique dark discoidal bar, a diffused postmedial line oblique below vein 4 and diffused subterminal band; the extremities of the veins with slight dark streaks; cilia white with blackish line near base; the underside irrorated with fuscous.

Hab. E. Turkestan, Korla, Saichin-Kette, type † ♂ in Coll. Püngeler. *Exp.* 36 millim.

Genus **BRYOPHILA**.

	Type.
Pœcilia, Schrank, Faun. Boica, ii. (2) p. 157 (1802), nec Bl. Sch. Pisces, 1801	*muralis.*
Bryophila, Tr. Schmett. Eur. v. (1) p. 57 (1825)	*muralis.*
Metachrostis, Hübn. Verz. p. 204 (1827)	*muralis.*
Euthales, Hübn. Verz. p. 205 (1827)	*algæ.*
Cryphia, Hübn. Verz. p. 205 (1827)	*receptricula.*
Jaspidea, Hübn. Tent. ined.	*algæ.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about vertex of head and moderately fringed with hair in front, the 3rd rather long; frons smooth; eyes large, round; antennæ of male ciliated; build slender; thorax clothed almost entirely with scales, the prothorax without distinct crest, the metathorax with spreading crest; tibiæ moderately fringed with hair; abdomen with dorsal series of crests on basal segments. Fore wing with the apex rounded, the termen evenly curved, crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the postmedial line minutely dentate or waved.
  a. Fore wing with the claviform filled in with whitish.
    a^1. Fore wing with the medial shade interrupted in submedian interspace ..... *nilgiria*.
    b^1. Fore wing with the medial shade not interrupted in submedian interspace.
      a^2. Fore wing with the antemedial line oblique ..... *albiclava*.
      b^2. Fore wing with the antemedial line erect ..... *poliophæa*.
  b. Fore wing with the claviform not filled in with whitish.
    a^1. Hind wing with the ground-colour ochreous yellow... *deceptura*.
    b^1. Hind wing with the ground-colour not yellow.
      a^2. Fore wing with the cilia chequered white and blackish.
        a^3. Fore wing with the subbasal line curved upwards above inner margin to or to near antemedial line ..... *muralis*.
        b^3. Fore wing with the subbasal line not curved upwards above inner margin.
          a^4. Fore wing with the orbicular and claviform confluent ..... *perla*.
          b^4. Fore wing with the orbicular and claviform not confluent.
            a^5. Fore wing without dark suffusion on base of costal area.
              a^6. Fore wing tinged with green ..... *sarepta*.
              b^6. Fore wing not tinged with green ..... *leucomelæna*.
            b^5. Fore wing with dark suffusion on base of costal area.
              a^6. Fore wing not tinged with green ..... *fascia*.
              b^6. Fore wing tinged with green.
                a^7. Fore wing with the postmedial line incurved at discal fold ..... *lichenea*.
                b^7. Fore wing with the postmedial line not incurved at discal fold ..... *literata*.
      b^2. Fore wing with the cilia not chequered white and black.
        a^3. Fore wing rufous suffused with fuscous ..... *miltophæa*.
        b^3. Fore wing ochreous suffused with fuscous.
          a^4. Hind wing wholly suffused with brown ..... *modesta*.
          b^4. Hind wing white, the terminal area suffused with brown.
            a^5. Fore wing with the antemedial area and the postmedial area towards inner margin yellowish without dark irroration.
              a^6. Fore wing with the postmedial line slightly excurved beyond the cell and closely approximated to the reniform ..... *plumbeola*.
              b^6. Fore wing with the postmedial line excurved to well beyond the cell and well separated from the reniform ..... *eucta*.
            b^5. Fore wing with the ante- and postmedial areas irrorated with fuscous.
              a^6. Fore wing with the medial area thickly irrorated with black ..... *ochrophæa*.
              b^6. Fore wing with the medial area nearly uniform black ..... *vilis*.
        c^3. Fore wing grey suffused and irrorated with dark brown ..... *simonyi*.
        d^3. Fore wing more or less tinged with green or olive.
          a^4. Fore wing with patches of fulvous on the ante- and postmedial lines ..... *marginelota*.

b^4. Fore wing without patches of fulvous on the ante- and postmedial lines.
a^5. Fore wing with whitish annuli to orbicular and reniform ..... *virescens.*
b^5. Fore wing without whitish annuli to orbicular and reniform.
a^6. Fore wing with the antemedial line very oblique and closely approximated to the postmedial line at inner margin ..... *stictica.*
b^6. Fore wing with the antemedial line less oblique and well separated from the postmedial line at inner margin.
a^7. Fore wing with the ante- and postmedial areas strongly tinged with green or yellow. *algæ.*
b^7, Fore wing grey-brown slightly tinged with green..... *receptricula.*

B. Fore wing with the postmedial line not dentate or waved.
a. Fore wing with the postmedial line oblique or slightly incurved below vein 4.
a^1. Fore wing with white patch on inner medial area ..... *labecula.*
b^1. Fore wing without white patch on inner medial area.
a^2. Fore wing with the ante- and postmedial lines filled in with orange..... *petricolor.*
b^2. Fore wing with the ante- and postmedial lines not filled in with orange.
a^3. Fore wing with the claviform filled in with whitish. *tabora.*
b^3. Fore wing with the claviform not filled in with whitish.
a^4. Fore wing with the terminal area much paler than the medial area ..... *distincta.*
b^4. Fore wing with the terminal area not paler than the medial area.
a^5. Fore wing strongly irrorated with black ..... *galathea.*
b^5. Fore wing not irrorated with black ..... *ravula.*
b. Fore wing with the postmedial line strongly incurved below vein 4.
a^1. Fore wing with the ground-colour ochreous white.
a^2. Fore wing suffused with red-brown ..... *mæonis.*
b^2. Fore wing not suffused with red-brown.
a^3. Fore wing strongly tinged with yellow ..... *paulina.*
b^3. Fore wing not tinged with yellow.
a^4. Fore wing with the postmedial line not angled outwards below costa..... *ochrota.*
b^4. Fore wing with the postmedial line acutely angled outwards below costa..... *thamanœa.*
b^1. Fore wing with the ground-colour grey-brown.
a^2. Hind wing whitish, the terminal area suffused with brown.
a^3. Fore wing with large white patch on inner half of medial area before the postmedial line ..... *semifascia,*
b^3. Fore wing without white patch on medial area before the postmedial line.
a^4. Fore wing with the reniform yellowish ..... *pineti.*
b^4. Fore wing with the reniform not yellowish.
a^5. Fore wing with the medial area not darker than the ground-colour ..... *divisa.*
b^5. Fore wing with the medial area darker than the ground-colour ..... *dolopis.*
c^2. Hind wing bright rufous.
a^3. Fore wing with the postmedial line not incurved at discal fold ..... *contristans.*

*b*³. Fore wing with the postmedial line slightly incurved at discal fold ..... *petrea*.
*d*². Hind wing uniform dark brown.
*a*³. Fore wing without black streaks in submedian fold, on medial area, and beyond postmedial line ..... *felina*.
*b*³. Fore wing with black streaks in submedian fold, on medial area, and beyond postmedial line.
*a*⁴. Fore wing with the postmedial line oblique from below costa to vein 6 ..... *granitalis*.
*b*⁴. Fore wing with the postmedial line strongly excurved from below costa to vein 4 ..... *palliola*.

3497. Bryophila nilgiria. (Plate CXXII. fig. 10.)

Bryophila nilgiria, Moore, P. Z. S. 1881, p. 332; Hmpsn. Moths Ind. ii. p. 298.

Head white; palpi black except at tips; antennæ ringed with black; thorax white mixed with pale red-brown and some black, the patagia edged with black scales, the prothorax with paired black points; pectus and legs white, the tibiæ and tarsi banded with black; abdomen white dorsally suffused with black-brown leaving white segmental lines. Fore wing white tinged in parts with pale olive-brown and irrorated with a few black scales; subbasal line strong, black, excurved below subcostal nervure and ending at vein 1; antemedial line black, oblique, waved; claviform defined by black below and at extremity, extending to median nervure; orbicular and reniform defined by black, the former small, round, the latter open above, extending to well below cell and expanding at lower extremity; two black bars from middle of costa and a striga from inner margin; postmedial line double, the outer line indistinct and very incomplete, slightly bent outwards below costa, angled outwards at vein 6, then minutely waved, oblique to vein 4, then bent inwards to below end of cell, some alternating black and white points beyond it on costa; subterminal line hardly traceable, white, defined on inner side by some brownish suffusion on costal area and by black points below veins 7 and 4, some brownish suffusion beyond it from below costa to vein 4, a brownish streak on terminal area below vein 2; a terminal series of small black lunules; cilia chequered black and white. Hind wing fuscous black, the basal area whitish; an indistinct curved postmedial line defined by whitish on outer side; cilia white intersected with black at the veins; the underside white, the basal area suffused with brown to below cell, the costal area slightly irrorated with black to the strong curved maculate black postmedial line.

Hab. Madras, Nilgiris (*Hampson*), 4 ♂, 4 ♀, type. *Exp.* 32–36 millim.

Larva. Head pale red with black markings; body dark olive-brown sparsely clothed with short whitish hairs, the 2nd to anal somites with white transverse lines on subdorsal area; all the somites with prominent white spots on dorsal and lateral areas; ventral prolegs retractile. Food-plants: Lichens. (*W. H. Campbell.*)

3498. **Bryophila albiclava**, n. sp. (Plate CXXII. fig. 11.)

♀. Head and thorax white; palpi and antennæ blackish; frons with black patch; tegulæ and patagia edged with black; legs irrorated with brown, the tarsi blackish ringed with white; abdomen pale yellowish brown. Fore wing white with a faint bluish tinge and sparsely irrorated with black-brown; subbasal line black, double, waved, extending to inner margin, with black-brown suffusion before and beyond it on costa; antemedial line double, oblique, waved, the inner line interrupted; claviform white defined by black; orbicular and reniform large, white defined by black except above, the former with black-brown centre defined by black, round, conjoined to antemedial line, the latter with small black lunule on inner side of centre; medial area black-brown to the indistinct curved minutely waved medial line; postmedial line double, slightly bent outwards below costa, then dentate, excurved to vein 4, then strongly incurved, the costal area beyond it black-brown with some white points on costa; subterminal line black-brown, angled outwards above and below vein 6, incurved at discal fold to postmedial line, slightly excurved at middle, then angled inwards in submedian fold and outwards on vein 1; a terminal series of small black lunules; cilia chequered black-brown and white. Hind wing white tinged with reddish brown; a faint discoidal spot, curved postmedial line, and diffused subterminal band; a terminal series of slight dark lunules; the underside white tinged with brown, the costal and terminal areas irrorated with brown, a blackish discoidal spot and faint curved postmedial line.

Hab. Kashmir, Goorais Valley (*Leech*), 1 ♀ type. *Exp.* 36 millim.

3499. **Bryophila poliophæa**, n. sp. (Plate CXXII. fig. 12.)

Head and thorax whitish mixed with olive-brown and irrorated with black; palpi blackish, the extremity of 2nd joint white; antennæ blackish; tegulæ and patagia edged with black; tarsi blackish ringed with white; abdomen grey-white suffused with brown. Fore wing whitish tinged with pale olive-green and irrorated with fuscous; subbasal line black defined by white on outer side, oblique, waved, from costa to vein 1, with a small black spot beyond it in cell and some fuscous suffusion on costal and inner areas; antemedial line double, black filled in with white, the lines well separated and the inner line indistinct, slightly sinuous; claviform pale defined by black, with a short white streak defined by black above its extremity on median nervure; orbicular a minute black annulus; reniform an oblique black bar; traces of an oblique minutely waved line from lower angle of cell to inner margin; the medial area suffused with fuscous; postmedial line double filled in with whitish, slightly bent outwards below costa, then minutely waved, obliquely excurved to vein 4, then strongly incurved, some fuscous suffusion beyond it on costal area with white points on costa; subterminal line very indistinct, blackish,

minutely waved, angled outwards at vein 7 and incurved at discal fold and below vein 3; a terminal series of minute black lunules; cilia chequered brownish white and fuscous. Hind wing whitish uniformly suffused with brown; a faint discoidal spot and curved postmedial line; a slight dark terminal line; cilia white faintly tinged with brown; the underside brownish white with some dark irroration on terminal area, a black discoidal spot and somewhat diffused curved postmedial line.

Hab. Kashmir, Chamba (*McArthur*), 1 ♂ type, Kardong (*McArthur*), 1 ♀. *Exp.* 30 millim.

3500. Bryophila deceptura.

Diphtera deceptura, Wlk. xxxii. 614 (1865).
Bryophila postochrea, Hmpsn. Ill. Het. B.M. ix. p. 95, pl. 161. f. 8 (1893); id. Moths Ind. ii. p. 298.

♀. Head white; palpi black, white at tips; frons with lateral black bars; antennæ black; vertex of head with black point; thorax grey mixed with fuscous; pectus and legs white, the tibiæ and tarsi banded with black; abdomen whitish suffused with fuscous brown. Fore wing whitish irrorated with fuscous and black; the medial area suffused with fuscous brown from cell to inner margin, the postmedial area fuscous brown; subbasal line represented by black striæ from costa and cell; an oblique black streak from base of costa to above vein 1 before the antemedial line, which is strong, black, waved, bent outwards below costa, excurved in submedian interspace and bent inwards above inner margin; claviform defined by black, extending to median nervure and with curved mark below it above inner margin; orbicular and reniform whitish defined by black and with some brownish in centres, the former small, round, the latter constricted at middle and slightly angled inwards on median nervure, a waved medial line from cell to inner margin; postmedial line slight, black, bent outwards below costa, then minutely waved, strongly incurved below vein 4, some minute whitish points beyond it on costa; subterminal line formed by a series of dentate white marks defined on each side by dentate black marks, angled outwards at veins 4, 3; a diffused irregular fuscous band before termen from below apex to vein 4 and above tornus; a terminal series of small black lunules defined on inner side by small white lunules; cilia white with series of blackish spots. Hind wing ochreous yellow, the terminal area broadly suffused with fuscous brown, an indistinct discoidal spot and sinuous postmedial line; cilia white tinged with brown in parts; the underside paler suffused with brown and ochreous, an indistinct diffused discoidal spot and curved minutely waved postmedial line.

Ab. 1. Fore wing with the medial area wholly fuscous brown; hind wing almost wholly suffused with brown.—Horsleykonda.

Hab. Madras, Horsleykonda (*Campbell*), 1 ♀; Ceylon, Trincomali (*Yerbury*), 1 ♂ type *postochrea*. *Exp.* 30 millim.

3501. Bryophila muralis.

Noctua muralis, Forst. Nov. Spec. Ins. p. 74 (1771); Staud. Cat. Lep. pal. p. 167.
Noctua glandifera, Schiff. Wien. Verz. p. 70 (1776); Hübn. Eur. Schmett., Noct. f. 24; Frr. Neue Beitr. i, pl. 70, f. 2; Steph. Ill. Brit. Ent., Haust. iii. p. 44.
Noctua lichenes, Fab. Spec. Ins. ii. p. 235 (1781); Esp. Schmett. iv. pl. 118. f. 8 (1787); Donov. Nat. Hist. Brit. Ins. vii. pl. 223. f. 3; Dup. Lép. Fr. vi. p. 207, pl. 86. ff. 1–3.
Noctua par, Hübn. Eur. Schmett., Noct. f. 515 (1818); Frr. Neue Beitr. pl. 70. f. 3.
Bryophila perloides, Guen. Noct. i. p. 29 (1852); Rmbr. Lep. S. And. pl. 7. f. 4 & pl. 13. f. 1.
Bryophila liguris, Mill. Mém. Soc. Cannes, 1878, p. 27, pl. 3. f. 8.
Bryophila impar, Warren, E. M. M. xxi. p. 22 (1885); id. Entom. xiv. pl. 1. f. 18.
Bryophila obscura, Tutt, Entom. xxi. p. 48 (1888).

Head white; palpi with black spot at side of 2nd joint; antennæ with the basal joint black, the shaft fuscous except at base; thorax greenish white, the tegulæ with dorsal black spot at base and black tips, the patagia with some black scales on upper edge, the metathorax mixed with black; pectus white tinged with brown; legs white, the tibiæ and tarsi banded with black; abdomen white suffused and irrorated with brown, the crests tipped with black.

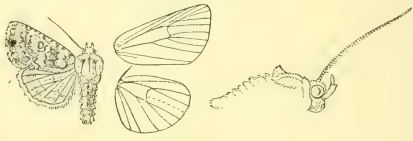


Fig. 163.—*Bryophila muralis*, ♂. ½.

Fore wing very pale blue-green; black points at base of costa and median nervure; subbasal line represented by double black striæ from costa and a line from cell with some fuscous suffusion before it, excurved, then bent outwards above inner margin and upwards at extremity: antemedial line with double black spots at costa and an oblique slightly sinuous line with a fuscous band beyond it from middle of cell to vein 1; orbicular round, defined by black lunules at sides only, closely approximated to the reniform, which is small, its centre tinged with fuscous and rather incompletely defined by black; two black bars from middle of costa and a slightly sinuous line from cell to vein 1; postmedial line with black spot at costa, slightly bent outwards below costa, then minutely waved, excurved to vein 4, then incurved and angled outwards at vein 1, a slight band of fuscous suffusion beyond it except towards costa and some white points on costa defined by black; subterminal line black, defined on inner side by a fuscous bar from costa, excurved below vein 7 and at middle, angled inwards and forming small dentate marks below costa and at discal and submedian folds, a slight band

of fuscous suffusion beyond it except towards costa and inner margin; cilia white, with a series of small triangular black marks at base extending slightly on to termen and a series of black spots at tips. Hind wing whitish uniformly suffused with brown, traces of a discoidal lunule and sinuous punctiform postmedial line; a dark terminal line; cilia white with some brownish marks at base; the underside white irrorated with brown especially on costal area and apical half of terminal area; a small black discoidal spot, sinuous maculate postmedial line strongly excurved below costa, and waved terminal line.

Ab. 1. *obscurior*. Darker.

Ab. 2. *par*. Paler, the lines brownish and less prominent.

Ab. 3. *impar*. Fore wing greenish white mottled with brown, the lines brown, not prominent.

Ab. 4. *perloides*. Much smaller; fore wing irrorated with yellow.—Andalusia.

Hab. Britain, Leech Coll.; France, Zeller and Sand Colls.; Germany, Zeller, Frey, and Leech Colls.; Austria. Zeller and Leech Colls.; Hungary, D'Emmick Coll.; Switzerland, Frey Coll.; Spain, Andalusia; Sardinia (*Fletcher*); Italy, Capri (*C. S. Browne*); Dalmatia; Algeria; Armenia, 1 ♀; Asia Minor, Pontus; Persia, 1 ♂, 1 ♀, Leech Coll. *Exp.* 28–32 millim.

Larva. Meyr. Brit. Lep. p. 138; Barrett, Lep. Brit. vi. p. 207, pl. 249. f. 1.

Bluish grey; dorsal line white, irregular, sometimes interrupted; subspiracular line pale or yellowish; spots white; head and thoracic plate black. Food-plants: Lichens on walls. 10-5.

3502. Bryophila perla.

Noctua perla, Schiff. Wien. Verz. p. 70 (1776); Fabr. Mant. Ins. ii. p. 173 (1789); Esp. Schmett. iv. pl. 177. f. 2; Hübn. Eur. Schmett., Noct. f. 25; Frr. Neue Beitr. i. pl. 70. f. 1; Dup. Lép. Fr. Suppl. vi. p. 210, pl. 86. f. 4; Steph. Ill. Brit. Ent. Haust. iii. p. 45; Mill. Mém. Soc. Cannes, 1879, p. 135, pl. 7. ff. 12, 13; Staud. Cat. Lep. pal. p. 167.
Bryophila pyrenæa, Oberth. Ét. Ent. viii. p. 48, pl. 1. f. 13 (1884).
Bryophila suffusa, Tutt, Entom. xxi. p. 49 (1888).
Bryophila lutescens, Fuchs, Jhrb. Nass. xlii. p. 208 (1889).
Bryophila perlina, Staud. Cat. Lep. pal. p. 167 (1901).

Head and thorax white faintly tinged with brown, the dorsum of thorax with some black scales; 2nd joint of palpi with black patch at sides; antennæ brown; pectus and legs white mixed with brown, the tarsi banded with black; abdomen white with fuscous brown dorsal bands. Fore wing white tinged with olive-yellow; some greyish before the subbasal line, which is double at costa, the inner line bent outwards in cell, then minutely waved to inner margin; antemedial line with double widely separated black bars from costa, the outer line then bent inwards in cell and minutely waved to inner margin, defined by whitish on inner side, a large grey patch beyond it filling the claviform and orbicular, the former defined by white and black at extremity only, the latter by white and black at sides and black above; reniform with grey centre and

white annulus defined by black except above, constricted at middle; traces of an oblique waved line from cell to inner margin; post-medial line with two widely separated black spots at costa, strongly bent outwards below costa, then irregularly waved, incurved at discal fold and below vein 4, some white points with small black spots between them beyond it on costa; subterminal line formed of small black spots defined on inner side by a grey patch at costa, excurved below vein 7 and at middle, then incurved, some greyish suffusion beyond it; a terminal series of black striæ defined on inner side by slight white marks; cilia with a series of small black lunules and blackish spots at tips. Hind wing white; a blackish discoidal spot and curved postmedial line confluent on costal half with a diffused subterminal band emitting streaks on the veins to termen; cilia yellowish white with slight brownish maculate line through them; the underside white, a black discoidal spot, diffused minutely waved curved postmedial line, subterminal series of small spots, and terminal series of small lunules.

Ab. 1. *pyrenœa*. Fore wing mixed with yellowish.

Ab. 2. *suffusa*. Much darker; fore wing almost wholly suffused with fuscous, the markings blue-black.

Ab. 3. *perlina*. Smaller; fore wing generally mixed with luteous or rufous, sometimes much paler.—Aragon, Castille.

Hab. Britain (*Durrant*), Leech Coll.; France, Sand Coll., Pyrenees; Germany, Zeller, Leech, and Frey Colls.; Austria, Leech Coll.; Hungary; Switzerland, Zeller and Frey Colls.; Spain, Aragon, Castille; Italy; Dalmatia; Bulgaria; Scandinavia; S. Russia, Leech Coll.; Armenia. *Exp.* 24–32 millim.

Larva. Meyr. Brit. Lep. p. 138; Barrett, Lep. Brit. vi. p. 212, pl. 250. f. 1.

Pale bluish grey; a broad irregular orange or ochreous-yellow dorsal stripe, usually enclosing an interrupted dark grey dorsal line; lateral and spiracular lines sometimes whitish; spots black; head black. Food-plants: Lichens on walls. 10–5.

*3503. Bryophila sarepta. (Plate CXXII. fig. 13.)

Cerma sarepta, Barnes, Can. Ent. xxxix. p. 11 (1907).

Head and thorax pale green, some of the scales tipped with black especially on metathorax; abdomen greyish fuscous. Fore wing with the basal and antemedial areas and the postmedial area except at costa pale greenish, the rest of wing brown with a bronze tinge; a black point on costa at base; subbasal line black, angled at median nervure and ending at vein 1; antemedial line black, sinuous, erect; claviform and orbicular obsolete; reniform pale green defined by black, open above; postmedial line bent outwards below costa, excurved to vein 4, then incurved and bent outwards to inner margin; subterminal line black, irregular, interrupted, excurved at middle; cilia chequered brown and white. Hind wing fuscous with a faint discoidal point; the underside paler with discoidal point and indistinct postmedial line.

Hab. U.S.A. Arizona, Wilgus. *Exp.* 24 millim. This species is unknown to me; figured from a drawing from type in Coll. W. Barnes.

3504. **Bryophila leucomelæna**, n. sp. (Plate CXXII. fig. 14.)

♂. Head and thorax white with a few black scales; palpi with black points in front of 1st and 2nd joints; antennæ black ringed with white; tegulæ black at base; patagia with black upper edge; tarsi ringed black and white; abdomen white tinged with fuscous, the crests black. Fore wing white, the medial area largely suffused and irrorated with black especially beyond antemedial line; subbasal line represented by a black point below costa and curved mark below cell; the antemedial area with black points below costa, in cell and on vein 1; antemedial line strong, black, waved; orbicular and reniform defined by black, large, rather elliptical; postmedial line black, bent outwards below costa, then minutely waved, excurved to vein 4, then strongly incurved, some white points with black marks between them beyond it on costa; the terminal area slightly irrorated with black; an oblique subterminal black bar from costa and wedge-shaped marks from termen at discal and submedian folds; a terminal series of black spots; cilia chequered black and white and with black line through them. Hind wing white, the veins and terminal area irrorated with fuscous, a blackish discoidal spot, curved postmedial line, and black terminal line; cilia with some black at tips towards apex; the underside with the costal area irrorated with black, a black discoidal spot and rather diffused curved postmedial line.

Hab. Br. E. Africa, Naitolia (*Betton*), 1 ♂ type. *Exp.* 24 millim.

3505. **Bryophila fascia.** (Plate CXXII. fig. 15.)

Cerma fascia, Smith, J. N.Y. Ent. Soc. xi. p. 190 (1903).

♂. Head and thorax white, the latter mixed with some olive-yellow and black scales; palpi blackish at sides except towards extremity; tarsi blackish ringed with white; abdomen white irrorated with fuscous, the crests blackish. Fore wing white irrorated with olive-yellow and fuscous scales, the basal and medial areas, a costal patch on postmedial area and patches on terminal area at discal and submedian folds much darker; subbasal line indistinct, dark, waved, from costa to vein 1, bounding the dark basal area; antemedial line blackish, oblique, waved, incurved in cell and below submedian fold; claviform defined by blackish scales at extremity; orbicular and reniform large, white defined by rather diffused black scales and their centres irrorated with fuscous, the former elliptical, the latter rather irregular; postmedial line blackish, strongly bent outwards below costa, then waved, angled outwards at vein 6, incurved at discal fold and strongly below vein 4, some whitish points beyond it on the dark costal patch; subterminal line very indistinct

and much interrupted, dark, waved; a terminal series of blackish striæ; cilia white, chequered with olive-yellow and black at base. Hind wing white tinged and irrorated with fuscous; a faint discoidal lunule; cilia white with a faint fuscous line through them; the underside with the discoidal lunule more prominent, an indistinct diffused sinuous postmedial line.

♀. Fore wing more uniformly irrorated with fuscous, the markings less distinct.

Hab. U.S.A., California (*Cockerell*), 1 ♂, Doble, co-type † ♀ in Coll. J. B. Smith. *Exp.* ♂ 26, ♀ 30 millim.

3506. Bryophila lichenea.

Bryophila lichenea, Hmpsn. Ill. Het. B. M. viii. p. 72, pl. 144. f. 12 (1891); id. Moths Ind. ii. p. 297.

Head and thorax greenish white mixed with black-brown; palpi brown at base; antennæ black ringed with white; tegulæ edged with black; pectus and legs white, the fore tibiæ and the tarsi banded with black; abdomen white dorsally suffused with fuscous leaving slight white segmental lines. Fore wing greenish white irrorated with black; subbasal line strong, black, curved, from costa to vein 1; antemedial line black, oblique, excurved in cell, then slightly sinuous; claviform defined by blackish; orbicular very indistinctly defined by blackish and with blackish centre; reniform defined by black on inner side and very faintly on outer, large, constricted at middle; a slight dark medial shade from costa to median nervure; postmedial line double, the outer line indistinct on inner half, strongly bent outwards below costa, then minutely waved, oblique to vein 3, then incurved, some fuscous suffusion beyond it on costal area with pale points on costa; subterminal line hardly traceable except on costal area where it is defined by the dark suffusion, angled outwards at vein 7, then minutely waved; a terminal series of small black lunules; cilia with series of blackish lunules at base and small dark spots at tips. Hind wing fuscous, whitish at base; cilia white with a faint dark line near base; the underside white slightly irrorated with brown, a blackish discoidal spot, diffused curved postmedial line and terminal series of small lunules.

Ab. 1. Fore wing less strongly irrorated with black and with strong black medial shade from costa to median nervure.

Hab. Madras, Nilgiris (*Lindsay*, *Hampson*), 1 ♂, 4 ♀, type. *Exp.* 28–30 millim.

3507. Bryophila literata. (Plate CXXII. fig. 16.)

Bryophila literata, Moore, P. Z. S. 1881, p 331; Hmpsn. Moths Ind. ii. p. 297.

Head and thorax white; palpi black with the extremities of 2nd and 3rd joints white; antennæ blackish; tegulæ with black line at base and black tips; patagia edged with black mesothorax with a

pair of black spots; pectus and legs tinged with fuscous, the tarsi banded with black; abdomen white tinged with fuscous, the crests black. Fore wing greenish white sparsely irrorated with black, the subbasal area, medial area except beyond cell, and postmedial costal area suffused with black; subbasal line represented by black bars from costa and cell with blackish spot beyond it on costa; antemedial line double, the inner line indistinct except on inner area, oblique, minutely waved, angled outwards on vein 1; claviform defined by a dark striga at extremity; orbicular and reniform defined by black, the former with fuscous centre, round, the latter with some fuscous on inner edge, a round white spot defined by black between them in cell; postmedial line double, with black spots at costa, slightly bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line only defined by blackish suffusion and minute dentate black marks on its inner edge, excurved below vein 7 and at middle, then incurved and ending at vein 1; a waved black terminal line; cilia with series of black spots at base and black-brown spots at tips. Hind wing white, the terminal half tinged with fuscous from costa to vein 3; a faint discoidal spot, diffused sinuous postmedial line, and diffused subterminal band; a slight dark terminal line; cilia with series of dark spots from apex to vein 2; the underside with slight dark irroration on costal and terminal areas, a blackish discoidal spot, diffused maculate curved postmedial line, and some slight lunules on termen.

Hab. Kashmir, (*Reed*), 1 ♀ type, Kokser (*McArthur*), 2 ♂, 1 ♀, Dana (*McArthur*), 4 ♀; Punjab, Dalhousie (*Harford*), 3 ♂, 2 ♀, Dharmsála (*Hocking*), 2 ♂, 2 ♀. *Exp.* 28–34 millim.

3508. *Bryophila miltophæa.* (Plate CXXII. fig. 17.)

Bryophila miltophæa, Püng. ined.

Head and thorax yellow tinged with red and mixed with some black; palpi, pectus, and legs yellowish white, the tarsi banded with black; abdomen ochreous white tinged with brown. Fore wing yellow tinged with red, the basal area with its costal half and vein 1, and the medial area and postmedial costal area thickly irrorated with black, the terminal area less strongly irrorated; subbasal line slight, double, waved, from costa to vein 1; antemedial line rather indistinct, double, oblique, waved; claviform indistinctly defined by black, short and extending to median nervure; orbicular and reniform with black centres and pale annuli obscurely defined by black, the former elliptical, the latter constricted at middle; an indistinct black medial line oblique from costa to lower angle of cell and incurved in submedian interspace; postmedial line rather indistinctly double, bent outwards below costa, then dentate, incurved below vein 4, some whitish points beyond it on costa; subterminal line very indistinct, pale, slightly excurved below vein 7 and at middle; a terminal series of small black lunules; cilia chequered fuscous

and yellow at base and with fine pale line at middle. Hind wing ochreous white tinged with reddish brown, especially on terminal area; cilia yellowish white; the underside yellowish white with slight dark discoidal spot and sometimes traces of a postmedial line on costal half and some dark irroration on terminal area.

Hab. W. Turkestan, Alexander Mts., type † ♂, ♀ in Coll. Püngeler. *Exp.* 32 millim.

3509. Bryophila modesta. (Plate CXXII. fig. 18.)

Bryophila modesta, Moore, P. Z. S. 1881, p. 332; Hmpsn. Moths Ind. ii. p. 297.
Bryophila confucii, Alph. Rom. Mém. vi. p. 19, pl. 1. f. 8 (1892).

♂. Head and thorax very pale brown slightly mixed with fuscous; palpi fuscous with the extremities of 2nd and 3rd joints pale; antennæ fuscous; pectus and legs whitish, the tarsi fuscous ringed with white; abdomen pale brown, the crests fuscous. Fore wing ochreous irrorated with fuscous, rather more thickly on basal half of medial area except towards costa; subbasal line very indistinct, blackish, oblique, waved, from costa to submedian fold, with slight blackish marks beyond it in and below cell; antemedial line double, the inner line very indistinct, waved, erect; claviform slightly defined by blackish; orbicular small, round, with brownish centre defined by black; reniform a faint pale bar slightly defined by dark suffusion; a faint diffused waved medial line; postmedial line indistinctly double filled in with pale brown, slightly bent outwards below costa, then dentate, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line very indistinct, pale with minute dark spot on inner side below vein 7, excurved below vein 7 and at middle; a terminal series of faint minute dark lunules defined on inner side by slight pale lunules; cilia with a fuscous line near base. Hind wing whitish suffused with brown, the terminal area darker; a slight curved postmedial line; cilia yellowish at base with brown medial line and white tips; the underside white faintly tinged with brown.

♀. Rather greyer.

Hab. China, Ou-pin; Punjab, 1 ♂ type, Kulu, Sultanpur (*G. Young*), 1 ♂, Simla (*Harford*), 1 ♀. *Exp.* 30 millim.

3510. Bryophila plumbeola. (Plate CXXII. fig. 19.)

Bryophila plumbeola, Staud. Stett. ent. Zeit. 1881, p. 410; id. Cat. Lep. pal. p. 166.

Head and tegulæ white slightly irrorated with brown; thorax ochreous irrorated with fuscous on dorsum; palpi with the 2nd joint tinged with fuscous at base; pectus and legs white, the fore tarsi slightly banded with fuscous; abdomen ochreous white. Fore wing yellow thickly irrorated with leaden grey except on basal area, a large subbasal patch of leaden grey irrorated with white from costa to vein 1, with the indistinct diffused waved whitish subbasal line on

it; antemedial line fuscous defined by white on inner side, irregularly waved, erect; medial area leaden grey irrorated with white; orbicular and reniform with faint whitish annuli slightly defined by fuscous, the former elliptical, a patch of ochreous between them in cell extending to costa; postmedial line fuscous defined by white on outer side, slightly bent outwards below costa, excurved to vein 4, then strongly incurved and bent outwards to inner margin, some ochreous points on a leaden grey patch beyond it on costa; subterminal line whitish slightly defined by brown on inner side, excurved below vein 7 and at middle and bent outwards to tornus, some dark irroration beyond it; a terminal series of small indistinct dark spots; cilia ochreous with series of indistinct dark marks. Hind wing white tinged with ochreous; cilia pure white; the underside white, the inner half faintly tinged with ochreous, a slight ochreous discoidal lunule and curved postmedial line.

Ab. 1. Fore wing with the postmedial area except towards costa and the terminal area much yellower.—Syria.

Hab. Syria, Zeitun, 1 ♂, Aintab, 1 ♀; W. Turkestan, Tarbagatai Mts., Saisan. *Exp.* ♂ 24, ♀ 28 millim.

3511. **Bryophila eucta.** (Plate CXXII. fig. 20.)

Bryophila eucta, Püng. ined.

♂. Head and thorax white mixed with some fuscous; abdomen white dorsally suffused with fuscous except at base leaving slight pale segmental lines. Fore wing white tinged with ochreous and irrorated with fuscous; an indistinct blackish subbasal line excurved below cell and ending at vein 1, with patches of blackish irroration beyond it on costal and inner areas; antemedial line erect, waved; medial area suffused with black except beyond the cell; orbicular with blackish centre and undefined whitish annulus, round; reniform with its centre defined by black and undefined whitish annulus, elliptical; postmedial line blackish, minutely dentate, obliquely excurved from costa to vein 4, then strongly incurved and excurved at vein 1; subterminal line indistinct, pale, slightly defined by fuscous suffusion on inner side, excurved below costa and at middle and obsolete below vein 3; a terminal series of minute black points. Hind wing white, the terminal area tinged with fuscous; cilia white; the underside white, an indistinct curved dark subterminal line, the termen tinged with fuscous.

Hab. N.W. Persia, Urumiah (*Günther*), 1 ♂; W. Turkestan, Askabad, type † ♂ in Coll. Püngeler. *Exp.* 24 millim.

3512. **Bryophila ochrophæa,** n. sp. (Plate CXXII. fig. 21

Head and thorax brownish white slightly irrorated with brown: palpi with blackish patch on 2nd joint; tarsi banded with blackish; abdomen ochreous white with faint dorsal brown bands, the ventral surface white. Fore wing brownish white irrorated with black-

brown; subbasal line represented by blackish bars from costa and cell with dark marks beyond it on costa, in cell, and above inner margin; antemedial line blackish; indistinctly double except towards costa, waved, almost erect, a band of thick dark irroration beyond it; orbicular and reniform with blackish centres and slight dark outlines, the former small, round, the latter somewhat constricted at middle; an indistinct waved medial line from cell to inner margin; postmedial line with small black spot at costa, slightly bent outwards below costa and incurved at discal fold, incurved and somewhat dentate below vein 4; subterminal line only defined by a band of dark irroration on its inner side, excurved below vein 7 and at middle and incurved at discal and submedian folds; a terminal series of black striæ. Hind wing white faintly tinged with brown; cilia pure white; the underside white faintly tinged with brown.

Ab. 1. ♀. Fore wing darker and more suffused with black especially on medial area.

Hab. Kashmir, Dras (*Leech*), 4 ♂, 4 ♀, type. *Exp.* 24–30 millim.

*3513. Bryophila vilis. (Plate CXXII. fig. 22.)

Bryophila vilis, Püng. ined.

♂. Head and thorax ochreous white mixed with black; tarsi blackish ringed with white; abdomen ochreous white dorsally suffused with fuscous. Fore wing ochreous white thickly irrorated with black, the medial area almost wholly suffused with black; subbasal line indistinct, pale, waved, from costa to vein 1; antemedial line whitish, angled outwards below costa and in submedian fold; claviform absent; orbicular and reniform with faint pale annuli, the former round, the latter hardly traceable; postmedial line indistinct, whitish, bent outwards below costa, then dentate, incurved below vein 4, some whitish points beyond it on costa; subterminal line very indistinct, pale, excurved below vein 7 and at middle; a terminal series of indistinct black lunules; cilia whitish mixed with some black and with black line at middle. Hind wing white slightly tinged with brown especially on terminal area; cilia white; the underside white faintly tinged with ochreous and with traces of a dark discoidal point.

♀. Fore wing more uniformly suffused and irrorated with black.

Hab. W. Turkestan, Merv, type † ♂, ♀ in Coll. Püngeler. *Exp.* 36 millim.

3514. Bryophila simonyi.

Bryophila simonyi, Rghfr. Verh. Zool.-bot. Wien, Sitzb. 1889, p. 36; Rebel, Ann. Nat. Hofmus. Wien, ix, p. 50 (1894); Staud. Cat. Lep. pal. p. 167.
Bryophila canaria, Alph. Rom. Mém. v. p. 224, pl. 11. f. 5 (1889).
Bryophila maderensis, Beth.-Baker, Trans. Ent. Soc. 1891, p. 205.
Bryophila debilis, Rebel, Ann. Nat. Hofmus. Wien, p. 50 (1894).

Head and thorax brown mixed with grey and black; tarsi black ringed with white; abdomen fuscous brown, the anal tuft ochreous, the ventral surface grey-white tinged with brown. Fore wing grey

thickly irrorated with brown, the medial area slightly suffused with brown; subbasal line black, waved, from costa to submedian fold; antemedial line waved, slightly oblique; claviform slightly defined by black; orbicular and reniform defined by black, the former round, somewhat open above and below, the latter slightly constricted at middle; an indistinct medial line, oblique from costa to lower angle of cell, then incurved and angled outwards on vein 1; postmedial line double, the outer line indistinct, bent outwards below costa, then dentate, strongly incurved below vein 4, some white points beyond it on costa; a faint pale subterminal line defined on inner side by small dentate black marks, excurved below vein 7 and at middle and incurved at discal and submedian folds; a terminal series of minute black lunules; cilia brown with series of white points at base. Hind wing greyish suffused with reddish brown, the terminal area rather darker; cilia whitish at base, brown at tips; the underside white tinged and irrorated with brown, a fuscous discoidal spot and diffused curved postmedial line, the termen suffused with fuscous.

Ab. 1. *debilis*. Smaller and paler.—Lanzarote I.

Hab. Madeira (*Mungo Park, Wollaston*), 4 ♂, 7 ♀; Canaries, Teneriffe (*W. White*), 1 ♀, Lanzarote I. *Exp.* 24–28 millim.

*3515. Bryophila marginelota.

Bryophila marginelota, L. de Joan. Ann. Soc. Ent. Fr. 1888, p. 271, pl. 6. f. 10; Staud. Cat. Lep. pal. p. 167.

Head and thorax grey mixed with black and fulvous scales: tarsi banded with black; abdomen grey irrorated with brown, the anal tuft of male white. Fore wing grey suffused with dark olive greens and browns, irrorated with black, and with some patches of fulvous at the lines which are black; the subbasal line waved, from costa to submedian fold; the antemedial line double, waved; claviform large, defined by black; orbicular and reniform defined by black, incompletely above and below, and with a fulvous bar from costa between them; postmedial line indistinct, strongly dentate, bent outwards below costa, excurved to vein 4, then incurved; terminal area suffused with white with some fulvous points representing the subterminal line; a terminal series of slight points; cilia white irrorated with black. Hind wing fuscous, whitish towards base especially in male; cilia white; the underside white irrorated with brown, a slight discoidal spot and curved postmedial line with the area beyond it brownish.

Hab. Syria, Beyrout, type † ♂, ♀ in Coll. Joannis; Transcaspia, Kulab in Coll. Püngeler. *Exp.* 30 millim.

3516. Bryophila virescens. (Plate CXXII. fig. 23.)

Bryophila virescens, Hmpsn. Moths Ind. ii. p. 297 (1894).

Head and thorax white tinged with green; palpi with blackish patches at sides of 2nd and 3rd joints; antennæ blackish; tegulæ and

patagia edged with black; metathorax with blackish patch; pectus and legs white mixed with fuscous, the tibiæ and tarsi banded with black; abdomen whitish dorsally suffused with brown except at base leaving pale segmental lines, the crests black. Fore wing pale green, the basal area and medial and terminal areas except towards costa suffused with brown; some black at base; subbasal line black, angled outwards in cell, from costa to inner margin, a black point beyond it on costa and short streak above vein 1; antemedial line strong, black, oblique, slightly sinuous and bent inwards to inner margin: claviform large, defined by black, extending to median nervure; orbicular and reniform large, defined by black, the former filled in with fuscous, irregularly rounded, the latter with some fuscous on inner side of centre, slightly angled inwards on median nervure; an oblique black striga from costa to reniform, and oblique minutely waved line from lower angle of cell to inner margin; postmedial line strong, black, double towards costa, bent outwards below costa, then minutely dentate, strongly incurved below vein 4, the costal area beyond it tinged with fuscous with alternating green and black points on costa; subterminal line represented by a series of small somewhat dentate black spots with short streak below costa and larger spot below vein 2, angled inwards at discal fold; a terminal series of black striæ; cilia chequered black and white. Hind wing greyish uniformly suffused with fuscous; a faint blackish discoidal spot and diffused curved postmedial and subterminal lines; cilia white at base, chequered black and white at tips; the underside white irrorated with fuscous, a black discoidal spot and diffused minutely waved postmedial line excurved below costa.

Hab. Kashmir, Scinde Valley (*Leech*), 1 ♀; Punjab, Simla (*Pilcher*), 1 ♂, Dalhousie (*Harford*), 1 ♂, 1 ♀ type. *Exp.* 24–28 millim.

3517. Bryophila stictica. (Plate CXXI. fig. 24.)

Microphysa stictica, Mén. Bull. Phys.-Math. Acad. St. Pétersb. xvii. p. 315 (1859).
Bryophila algæ, Leech, Trans. Ent. Soc. 1900, p. 138 (nec Fabr.).

Head, thorax, and abdomen grey-brown; palpi fuscous, pale at base; frons with lateral black bars; pectus and legs brownish grey. Fore wing pale sage-green, the basal and medial areas suffused with reddish brown; an oblique waved black subbasal line from costa to inner margin; some irregular black marks on antemedial area; antemedial line very oblique and slightly sinuous; claviform represented by a slight black striga at its extremity; orbicular and reniform faintly defined by fuscous, large, the former elliptical and conjoined to antemedial line, the latter extending to below cell and slightly constricted at middle; an oblique black striga from middle of costa and indistinct incurved minutely waved line from lower angle of cell to inner margin; postmedial line arising almost from middle of costa, strongly bent outwards below costa, then minutely waved, excurved to vein 3, then incurved, some green points on

brownish suffusion beyond it on costa; subterminal line represented by a series of small dentate black marks, excurved below vein 7 and at middle; a slight black terminal line; cilia brown with a dark line through them. Hind wing fuscous brown; the underside whitish, the costal area irrorated with rufous, the terminal area suffused with fuscous, a fuscous discoidal spot and indistinct curved postmedial line.

Ab. 1. Fore wing with the antemedial area whitish.

Ab. 2. Fore wing with the basal and terminal areas suffused with blackish, the medial area greyer.

Hab. Japan, Fushiki (*Leech*), 1 ♂, Yokohama (*Pryer*), 4 ♂, 2 ♀; C. China, Shanghai (*Pryer*), 1 ♂, Kiukiang (*Pryer*), 2 ♀, Changyang (*Pratt*), 1 ♂. *Exp.* 22–24 millim.

3518. Bryophila algæ.

Noctua algæ, Fabr. Syst. Ent. p. 614 (1775); Dup. Lép. Fr. vi. p. 212, pl. 86. f. 5; Staud. Cat. Lep. pal. p. 166.
Noctua degener, Schiff. Wien. Verz. p. 70 (1776); Esp. Schmett. iv. pl. 158. ff. 3, 4 (1791).
Noctua calligrapha, Borkh. Eur. Schmett. iv. p. 172 (1792); Hübn. Vögel und Schmett. f. 35; id. Eur. Schmett., Noct. f. 530.
Noctua chloris, Borkh. Eur. Schmett. iv. p. 173 (1792).
Noctua spoliatricula, Hübn. Eur. Schmett., Noct. f. 26 (1802); Frr. Neue Beitr. pl. 179. f. 4.
Noctua mendacula, Hübn. Eur. Schmett., Noct. f. 520 (1818); Herr.-Schäff. Eur. Schmett., Noct. ff. 84, 85.
Noctua strigula, Dup. Lép. Fr. vi. p. 215, pl. 86. f. 6 (nec Borkh.).

Head and thorax sage-green; palpi with fuscous patches on 2nd joint; frons with lateral black bars; tegulæ with black outer edge; patagia edged with black above; pectus and legs whitish mixed with fuscous, the tarsi black ringed with white; abdomen whitish suffused with brown, the crests fuscous. Fore wing sage-green irrorated with black, the medial area suffused with black; subbasal line black, obliquely waved, excurved below cell, extending to inner margin; the antemedial area with some irregular black marks; antemedial line black excurved below costa, angled slightly inwards below cell, then again excurved; orbicular and reniform defined by black, the former elliptical, the latter large, extending to well below cell and slightly constricted at middle; postmedial line double filled in with green, bent outwards below costa, excurved to vein 4, then incurved and minutely waved, the costa beyond it suffused with fuscous and with some greenish points; a series of small black spots before the faint pale subterminal line which is angled outwards at vein 7 and incurved below vein 3; a fine waved black terminal line; cilia grey mixed with fuscous and with a waved black line through them. Hind wing pale uniformly suffused with fuscous brown; cilia brownish white with a dark line through them; the underside whitish irrorated with brown, the terminal area suffused with brown, a faint discoidal spot and postmedial line excurved and crenulate to vein 3, then obsolescent.

Ab. 1. *degener*. Fore wing nearly uniform pale green.

Ab. 2. *mendacula*. Paler; fore wing variegated with dark markings.

Ab. 3. *calligrapha*. Similar, but fore wing with the antemedial and terminal areas more or less suffused with orange.

Ab. 4. Fore wing with the antemedial area whitish.

Hab. Britain; France, Sand and Leech Colls.; Germany, Zeller, Frey, and Leech Colls.; Austria, Leech Coll.; Hungary; Switzerland; Armenia; Asia Minor; W. Turkestan, Ferghana; E. Siberia, Ussuri. *Exp.* 24–30 millim.

Larva. Meyr. Brit. Lep. p. 138; Kirby, Butt. & Moths Eur. p. 159; Hffm. Raup. p. 77.

Greenish grey mixed with whitish; dorsal line and lateral spots white; a dorsal series of horseshoe-shaped black marks; spiracular line pale edged with blackish above; head black. Food-plants: Lichens on trees. 10–5.

3519. Bryophila receptricula.

Noctua strigula, Borkh. Eur. Schmett. iv. p. 181 (1792), nec. Thnb. 1788.
Noctua receptricula, Hübn. Eur. Schmett., Noct. f. 27 (1802); Frr. Neue Beitr. pl. 179. f. 3, and pl. 267. f. 1; Staud. Cat. Lep. pal. p. 166.
Bryophila pallida, Beth.-Baker, Trans. Ent. Soc. 1894, p. 37, pl. 1. f. 4.

Head and thorax dull grey-green; palpi blackish with white rings at extremity of 2nd and 3rd joints; tegulæ with slight dorsal black streak; patagia slightly edged with black above; tarsi blackish ringed with white; abdomen reddish brown with some whitish towards base, the crests blackish. Fore wing dull grey-green with slight dark irroration; subbasal line represented by double striæ from costa and cell, the inner striæ black, the outer faint; antemedial line black, obliquely curved and very slightly sinuous, indistinctly double at costa; the medial area with black streak in submedian fold; claviform small, defined by black; orbicular with faint double black outline, oblique elliptical; reniform large, extending to well below cell, slightly defined by black and somewhat constricted at middle; an oblique blackish striga from costa to reniform and traces of an incurved minutely waved line from reniform to inner margin; postmedial line double at costa, bent outwards below costa, excurved to vein 4, then incurved and minutely waved, some pale points beyond it on costa, an oblique black streak below vein 2 from just beyond it to near termen; subterminal line indistinct, dark, minutely waved and with black points at the veins, slightly excurved below vein 7; a terminal series of slight black striæ; cilia grey with a diffused black line through them. Hind wing whitish suffused with reddish brown especially on terminal area; an indistinct dark discoidal spot and curved minutely waved postmedial line; cilia white with a strong brown line through them; the underside white irrorated with fuscous, a black discoidal spot, a postmedial line excurved and

minutely crenulate from costa to vein 3, and diffused subterminal band from costa to vein 1.

Hab. France, Sand Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria, Zeller Coll.; Hungary, Leech Coll.; Switzerland; Italy, Naples, Zeller Coll.; Armenia; Asia Minor, Bithynia, Pontus; Egypt, Alexandria, type †*pallida* in Coll. Bethune-Baker. *Exp.* 24–30 millim.

Larva. Kirby, Butt. & Moths Eur. p. 160; Hffm. Raup. p. 77, pl. 22. f. 8. Yellowish with numerous black dots, lines and streaks. Food-plant: *Parmelia*. 7–8.

3520. Bryophila labecula. (Plate CXXI. fig. 25.)

Bryophila labecula, Led. Verh. z.-b. Wien, 1855, p. 204, pl. 2. f. 10; Staud. Cat. Lep. pal. p. 166.

♂. Head and thorax grey-white mixed with brown; pectus and legs mostly white, the tarsi brown ringed with white; abdomen ochreous white. Fore wing pale reddish brown tinged with grey and slightly irrorated with whitish; the base grey-white; subbasal line represented by slight black striæ from costa and cell; antemedial line black defined by white on inner side, nearly erect and slightly angled inwards on median nervure; the medial area with ochreous-white patch on inner margin, extending to submedian fold and emitting a tooth to origin of vein 2; claviform slightly defined by fuscous; orbicular and reniform with red-brown centres defined by fuscous and white annuli, both erect elliptical; postmedial line double, black filled in with whitish, slightly bent outwards below costa, excurved to vein 4, then oblique, the area beyond it redder brown except towards costa, and with some white points on costa; subterminal line white, excurved below vein 7 and at middle and angled inwards at discal and submedian folds; a diffused apical white patch; a terminal series of small brown lunules slightly defined by whitish. Hind wing ochreous white, the veins and terminal area tinged with rufous; a small brown discoidal lunule and fine terminal line; cilia brownish ochreous at base, white at tips; the underside yellowish white with brown discoidal spot and curved sinuous postmedial line.

Hab. Syria, Beyrout (*Lederer*), 1 ♂. *Exp.* 26 millim.

*3521. Bryophila petricolor.

Bryophila petricolor, Led. Ann. Soc. Ent. Belg. xiii. p. 46, pl. 1. f. 9 (1870); Staud. Cat. Lep. pal. p. 166.

♀. Head, thorax, and abdomen whitish tinged with brown, the last with the dorsal crests darker. Fore wing grey suffused with fuscous and white; subbasal line double filled in with orange; antemedial line double filled in with orange, slightly excurved below the cell; orbicular and reniform defined by black, the former oblique elliptical; a diffused dark medial line, oblique from costa to median nervure, then incurved; postmedial line double filled in with

orange and defined by white on outer side, bent outwards below costa and incurved below vein 4, some white points beyond it on costa; subterminal line whitish defined on inner side by blackish, slightly excurved below vein 7 and at middle, then incurved; a terminal series of black points. Hind wing grey tinged with brown especially towards termen, the underside with dark discoidal spot and indistinct diffused subterminal line.

Hab. Armenia; Asia Minor, Pontus. *Exp.* 26 millim. This species is unknown to me.

3522. *Bryophila tabora.

Bryophila tabora, Staud. Iris, iv. p. 264, pl. 3. f. 7 (1891); id. Cat. Lep. pal. p. 166.

Head and thorax fuscous brown mixed with pale brown; palpi pale with dark patches on 2nd joint; legs greyish ochreous mixed with fuscous; abdomen pale grey. Fore wing fuscous brown mixed with pale brown; subbasal line represented by double striæ from costa and cell filled in with pale brown; antemedial line double filled in with pale brown, oblique, minutely waved; claviform pale defined by black, small; orbicular and reniform small, with dark centres and pale annuli defined by black, the former elliptical; postmedial line blackish defined on outer side by pale brown, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line pale, excurved below vein 7 and at middle; a fine black terminal line; cilia with fine whitish line at base and intersected with whitish. Hind wing pale grey, the terminal half suffused with fuscous; a dark discoidal spot; cilia pale with a dark line through them.

Hab. Syria, Aintab, Mardin. *Exp.* 28 millim. This species is unknown to me.

*3523. Bryophila distincta.

Bryophila distincta, Christ. Rom. Mém. iii. p. 62, pl. 3. f. 9 (1887); Staud. Cat. Lep. pal. p. 167.

♂. Head, thorax, and abdomen grey. Fore wing greenish grey, the medial area darker except towards costa; subbasal line represented by a striga from costa and double striga from cell; antemedial line very oblique and almost straight; reniform whitish defined by black, an oblique dark striga from costa to it; postmedial line bent outwards below costa and incurved below vein 4, a paler band beyond it bent outwards to apex and a pure white spot above inner margin; subterminal line indistinct, pale, excurved below vein 7 and at middle. Hind wing grey tinged with fuscous especially towards termen.

Hab. W. Turkestan, Askabad. *Exp.* 28 millim. This species is unknown to me.

3524. Bryophila galathea.

Bryophila galathea, Mill. Rev. Zool. 1874, p. 241 ; id. Ann. Soc. Ent. Fr. 1875, p. 13, pl. 1. ff. 8, 9 ; id. Mém. Soc. Cannes, 1879, p. 136, pl. 7. f. 14 ; Staud. Cat. Lep. pal. p. 166.

♂. Head and thorax whitish mixed with black and some brown ; pectus and legs whitish tinged with brown, the tarsi banded with fuscous ; abdomen whitish tinged with brown, the crests black. Fore wing whitish suffused with reddish brown and thickly irrorated with black ; subbasal line black defined by white on outer side, waved, from costa to submedian fold, a blackish mark beyond it on inner margin ; antemedial line black slightly defined by white on inner side except at middle, erect, somewhat sinuous ; claviform slightly defined by blackish at extremity ; orbicular defined by black at sides, elliptical ; reniform defined by black on inner side, hardly defined on outer ; traces of a curved medial blackish line ; postmedial line indistinct, blackish, defined by white on outer side at costa and below submedian fold, bent outwards below costa, oblique to vein 5, then inwardly oblique and slightly sinuous, some white points beyond it on costa ; a white apical patch, the white subterminal line arising from it, incurved at discal and submedian folds, excurved to termen at middle ; a terminal series of black striæ ; cilia fuscous and grey, intersected with white at base and with dark medial line. Hind wing white tinged with red-brown ; a dark terminal line ; cilia white tinged with red-brown at base ; the underside white slightly tinged with red-brown, a slight discoidal lunule and traces of a curved postmedial line.

Hab. S.E. France, Alpes Maritimes, 1 ♂ ; Switzerland, Valais ; N. Italy. *Exp.* 30 millim.

3525. Bryophila ravula.

Noctua ravula, Hübn. Eur. Schmett., Noct. f. 461 (1818) ; Staud. Cat. Lep. pal. p. 166.

Noctua lupula, Hübn. Eur. Schmett., Noct. f. 573 (1818) ; Dup. Lép. Fr. vii. p. 367, pl. 122. f. 6, & Suppl. iv. pl. 69. f. 4 ; Frr. Neue Beitr. pl. 170. ff. 4, 5 ; Herr.-Schäff. Eur. Schmett., Noct. f. 86.

Bryophila ereptricula, Treit. Schmett. Eur. v (1) p. 66 (1825) ; Dup. Lép. Fr. vii. p. 239, pl. 115. f. 4 ; Frr. Beitr. pl. 84. ff. 1, 2, & pl. 129 ; id. Neue Beitr. pl. 52. f. 2 ; Boisd. Icones, pl. 71. f. 5.

Bryophila troglodyta, Frr. Neue Beitr. i. p. 102, pl. 52. f. 1 (1833).

Bryophila vandalusiæ, Dup. Lép. Fr. Suppl. iv. p. 405, pl. 82. f. 9 (1842) ; Herr.-Schäff. Eur. Schmett., Noct. f. 569 ; Rmbr. Cat. Lep. S. And. pl. 6. ff. 1, 2.

Head and thorax greyish mixed with red-brown and fuscous ; palpi blackish, white at base ; frons with lateral black bars ; pectus and legs whitish mixed with black, the tarsi blackish ringed with white ; abdomen whitish suffused with brown, the crests black. Fore wing red-brown with some dark irroration ; some whitish at base of inner margin ; the antemedial area and costal area to postmedial line suffused with fuscous and irrorated with grey, some whitish suffusion beyond postmedial line ; subbasal line double,

curved, from costa to vein 1, above which there is a whitish patch beyond it; antemedial line double, somewhat inwardly oblique and bent inwards to inner margin, the inner line slightly angled inwards in submedian fold; claviform represented by a slight brown striga at extremity; orbicular defined by black, elliptical; reniform with greyish centre slightly defined by black and whitish annulus slightly defined by black, constricted at middle; an oblique dark striga from middle of costa and faint incurved line from lower angle of cell to inner margin; postmedial line double filled in with whitish, the outer line indistinct, bent outwards below costa, excurved to vein 4, then incurved and slightly excurved at vein 1; the postmedial costal area blackish with oblique outer edge and some grey points on costa; an indistinct minutely waved brown subterminal line excurved below vein 7 and at middle; a black shade before termen from below apex to vein 3; a fine black terminal line; cilia grey and fuscous with a dark line through them. Hind wing white, the veins and terminal area tinged with brown; cilia white tinged with brown at apex and with slight brown marks at middle; the underside white, the costa and terminal area to vein 2 irrorated with brown, a small discoidal spot and sinuous postmedial line.

Ab. 1. *ereptricula*. Fore wing darker, the basal area suffused with white, the terminal area with diffused white spots towards costa and tornus.

Ab. 2. *vandalusiæ*. Fore wing much greyer; hind wing white in male.—Spain, Asia Minor, Mesopotamia.

Ab. 3. Similar, but fore wing with the antemedial area rufous.—Syria.

Hab. France, Sand and Leech Colls.; Germany, Zeller Coll.; Austria, Zeller and Leech Colls; Hungary, Leech Coll.; Switzerland, Frey Coll.; Spain, Galicia, Casayo (*Chapman*), Castille, Andalusia, Aragon; Italy; Dalmatia, Spalato, Zeller Coll.; Algeria; Asia Minor, Taurus Mts., 2 ♂, Amanus Mts, 1 ♀; Syria, Lebanon, 2 ♂, 1 ♀, Mardin; Mesopotamia; Kashmir, Dana (*McArthur*), 1 ♂. *Exp.* 24–30 millim.

Larva. Kirby, Butt. & Moths Eur. p. 160; Hffm. Raup. p. 77.

Blue with a black dorsal line and waved yellowish-red lateral stripe defined below by black. Food-plants: Lichens on walls. 5–6.

3526. Bryophila mæonis.

Bryophila mæonis, Led. Ann. Soc. Ent. Belg. 1865, pp. 63 & 78, pl. 3. f. 8; Staud. Cat. Lep. pal. p. 167.
Bryophila sordida, Staud. Iris, xii. p. 358 (1899).
Bryophila rubellina, Staud. Iris, xii. p. 359 (1899).

Head and thorax whitish suffused with reddish and fuscous brown; pectus and legs white tinged with brown, the tarsi banded with fuscous; abdomen white with indistinct dorsal reddish brown bands. Fore wing greyish suffused with reddish-brown and irrorated with fuscous; the medial and terminal areas slightly suffused with fuscous; an indistinct obliquely curved whitish subbasal line defined on each side by fuscous marks; an indistinct

blackish antemedial line excurved to median nervure, angled inwards just below cell, then again excurved; orbicular and reniform indistinctly defined by blackish, the former round, the latter constricted at middle; postmedial line whitish with blackish marks on inner side at costa, discal and submedian folds, strongly excurved from costa to vein 4, then strongly incurved, some whitish points beyond it on costa; subterminal line whitish, excurved below vein 7 and at middle and incurved at discal and submedian folds; a terminal series of minute black points; cilia with a whitish line at base. Hind wing white tinged with brown especially on terminal area; cilia pure white; the underside white tinged with brown, a small brown discoidal spot and faint curved postmedial line.

Ab. 1. *sordida*. Fore wing darker, often almost uniform leaden grey.

Ab. 2. *rubellina*. Fore wing pale reddish.

Hab. Cyprus (*Miss Bate*), 1 ♂, 1 ♀; Armenia; Asia Minor, Sira I, Magnesia (*Lederer*), 6 ♂, 7 ♀; Pontus, Taurus; Persia; W. Turkestan, Turcomania, Schahkuh (*Christoff*), 1 ♂, 1 ♀, Ferghana, Sarawschan, Issyk Kul; Tibet, Kuku-noor. *Exp.* 22–26 millim.

*3527. Bryophila paulina. (Plate CXXII. fig. 26.)

Bryophila paulina, Staud. Iris, iv. p. 265 (1891); id. Cat. Lep. pal. p. 167.

♀. Head, thorax, and abdomen pale ochreous; palpi whitish; antennæ ringed with black at base; tarsi slightly ringed with fuscous. Fore wing pale ochreous irrorated with a few black scales, the inner half of medial area more thickly irrorated; subbasal line blackish, excurved, from costa to vein 1; antemedial line fine, black, oblique, sinuous; claviform slightly defined by black, extending to cell; orbicular defined by black except above and with its centre defined by black, rather elliptical; reniform faintly defined and its centre faintly defined by black scales, constricted at middle; a medial black point on costa and a sinuous line from lower angle of cell to inner margin; postmedial line with black point on costa, then slight, bent outwards below costa, oblique to vein 4, then strongly incurved and sinuous, some dark points beyond it on costa; subterminal line blackish, diffused and interrupted, excurved below vein 7 and at middle and angled inwards at discal and submedian folds; a terminal series of black points. Hind wing ochreous white, the termen slightly tinged with red-brown; cilia white the underside white with a faint yellowish tinge.

Hab. Syria; Palestine, Jerusalem in Coll. Püngeler. *Exp.* 26 millim.

3528. Bryophila ochrota, n. sp. (Plate CXXII. fig. 27.)

Head and thorax white tinged with brown; 2nd joint of palpi with blackish patch at sides; tarsi banded with blackish; abdomen

ochreous white with dorsal brownish bands. Fore wing ochreous white mostly suffused with brown and irrorated with fuscous, the medial area rather darker; subbasal line indistinctly double filled in with whitish and with some rufous scales on it, from costa to submedian fold; antemedial line indistinctly double filled in with whitish and with some rufous on outer line, bent inwards to costa, then minutely waved; claviform with its extremity faintly defined by blackish; orbicular and reniform with brownish centres and slight whitish annuli faintly defined by blackish, the former round, the latter somewhat constricted at middle; traces of a waved medial line from cell to inner margin; postmedial line double filled in with whitish with some rufous on the inner line, bent outwards below costa, strongly excurved to vein 4, then strongly incurved, some white points beyond it on costa; traces of a pale minutely waved subterminal line incurved below vein 3; a terminal series of minute dark lunules defined on inner side by slight pale lunules; cilia with a slight whitish line through them. Hind wing white faintly tinged with brown; cilia pure white; the underside white faintly tinged with brown.

Hab. Kashmir, Dras (*Leech*), 1 ♀; Beloochistan, Quetta (*Nurse*), 1 ♂ type. *Exp.* 26 millim.

*3529. Bryophila thamanæa. (Plate CXXII. fig. 28.)

Bryophila thamanæa, Püng. ined.

♂. Head and thorax ochreous white mixed with black; pectus and legs ochreous white, the tarsi ringed with black; abdomen ochreous white dorsally tinged with brown, the crests blackish. Fore wing ochreous white irrorated with black especially on basal and medial areas; subbasal line indistinct, whitish, from costa to vein 1; antemedial line brown with ochreous white band on its inner edge, incurved at submedian fold; claviform absent; orbicular and reniform large, their centres defined by black, and with faint pale annuli obscurely defined by black, the former round, the latter figure-of-eight-shaped; postmedial line double, strongly bent outwards and acutely angled below costa, slightly incurved at discal fold, then excurved, angled inwards in submedian fold and again excurved, some whitish points beyond it on costa, and with traces of another sinuous black line beyond it; subterminal line obscurely defined by blackish marks on its inner side, excurved below vein 7 and at middle; a terminal series of black striæ; cilia whitish mixed with fuscous. Hind wing white faintly tinged with brown and with traces of a discoidal point and curved postmedial line; the underside white slightly tinged with ochreous.

Hab. Persia, Schahkuh, type † ♂ in Coll. Püngeler. *Exp.* 30 millim.

3530. Bryophila semifascia. (Plate CXXII. fig. 29.)

Chytonyx semifascia, Smith, Pr. U.S. Nat. Mus. xxii. p. 415 (1900); Dyar, Cat. Lep. N. Am. p. 107.

Head, tegulæ, and patagia dark brown mixed with white, the vertex of head whitish; thorax white with some brown scales; pectus whitish; tarsi black ringed with white; abdomen whitish suffused with brown. Fore wing pale reddish brown irrorated with white, the inner half suffused with fuscous; antemedial line blackish defined by grey on inner side, oblique, sinuous; the medial area with white patch from cell to inner margin; orbicular and reniform with faint grey annuli slightly defined by brown, the former round, the latter somewhat constricted at middle; traces of a medial line, oblique from costa to reniform and represented by some dark scales on the white patch; postmedial line blackish slightly defined by grey on outer side, bent outwards below costa, excurved to vein 5, then incurved and slightly angled outwards at vein 1; subterminal line very indistinct on costal half, excurved below vein 7 and angled inwards in discal fold and with wedge-shaped brown patch beyond it from below apex to discal fold, then represented by small white marks with dentate black marks on their inner side and blackish streaks beyond them; a blackish terminal line with minute white streaks at extremities of veins; cilia blackish mixed with some whitish. Hind wing white, the veins and termen tinged with brown; a fine brown terminal line; cilia with a slight brown line near base; the underside with the costal area and terminal area to vein 4 irrorated with brown, a small discoidal spot and traces of diffused postmedial line oblique below vein 4.

Hab. U.S.A., Colorado, 1 ♂. *Exp.* 32 millim.

*3531. Bryophila pineti.

Bryophila pineti, Staud. Stett. ent. Zeit. 1859, p. 212; Rmbr. Cat. Lep. S. And. pl. 11. f. 2; Staud. Cat. Lep. pal. p. 165.

♂. Head and thorax grey; abdomen whitish tinged with grey. Fore wing grey tinged with rufous; reniform small, oblique, yellowish defined by blackish on inner side; postmedial line indistinct and excurved from costa to vein 4, then strongly incurved and defined by yellowish on outer side; subterminal line faint, dark, excurved, angled inwards in submedian fold. Hind wing grey-white suffused with fuscous especially towards termen.

Hab. Spain, Andalusia, Chiclana, Castille. *Exp.* 27 millim. This species is unknown to me.

3532. Bryophila divisa.

Noctua divisa, Esp. Schmett. iv. pl. 158. ff. 5, 6 (1791)
Noctua pomula, Borkh. Eur. Schmett. iv. p. 183 (1792).
Noctua raptricula, Hübn. Eur. Schmett., Noct. f. 29 (1802); Frr. Neue Beitr. pls. 179, f. 1, & 267. f. 2 *d–f*; Staud. Cat. Lep. pal. p. 166.

Noctua deceptricula, Hübn. Eur. Schmett., Noct., f. 30 (1802); Frr. Neue Beitr. pl. 179. f. 2; Dup. Lép. Fr. Suppl. iii. p. 539, pl. 45. f. 5 *a–b*.
Noctua carbonis, Frr. Neue Beitr. vi. p. 102, pl. 544. f. 4 (1852).
Bryophila oxybiensis, Mill. Rev. d. Zool. 1874, p. 242; id. Ann. Soc. ent. Fr. 1875, p. 13, pl. 1. ff. 10–12; id. Mém. Soc. Cannes, 1879, pl. vii. ff. 9–11.
Bryophila striata, Staud. Hor. Soc. Ent. Ross. xiv. p. 366 (1879).
Bryophila eretina, Calb. Iris, i. p. 221, pl. 12. f. 3 (1888).

Head and thorax brown mixed with grey; palpi fuscous, whitish at base; pectus and legs whitish suffused with brown, the tarsi brown with slight pale rings; abdomen grey suffused with brown. Fore wing grey suffused with brown, the antemedial area from costa to submedian fold and thence the lower part of cell and area below it to submedian fold rufous to near termen, beyond the cell extending up to vein 6; traces of a curved antemedial line with dark striga from costa; orbicular small, round, slightly defined by blackish; reniform small, faintly defined by brown; traces of a sinuous brown line from lower angle of cell to inner margin; postmedial line double, the outer line indistinct, bent outwards below costa, strongly excurved to vein 4, then strongly incurved, a black streak beyond it in submedian fold to near termen; an ill-defined oblique greyish fascia from apex; faint traces of a minutely waved subterminal line; cilia brown, whitish at base. Hind wing white slightly suffused and irrorated with brown, especially on the veins and terminal area; the underside white slightly irrorated with brown.

Ab. 1. *eretina*. Palpi fringed with yellow hair in front.—C. Italy.

Ab. 2. *raptricula*. Fore wing without the rufous medial fascia, a white striga on postmedial line in submedian fold.

Ab. 3. *carbonis*. Fore wing darker.

Ab. 4. *oxybiensis*. Greyer; fore wing with the markings indistinct, sometimes almost obsolete.

Ab. 5. Grey-white; fore wing with or without rufous suffusion on disk of medial area.—Persia, Schahkuh in Coll. Püngeler.

Ab. 6. Grey-white; fore wing with the veins streaked with black.—Palestine, Jerusalem in Coll. Püngeler.

Ab. 7. *striata*. Fore wing with black streak on medial area in submedian fold.

Ab. 8. Like *striata* but fore wing with the ante- and postmedial lines strong and black.—Tibet, Lob-noor in Coll. Püngeler.

Hab. France, Sand, Frey, and Leech Colls.; Germany, Zeller and Frey Colls.; Austria; Hungary, Zeller Coll.; Switzerland; Spain, Aragon; Italy; Scandinavia; Russia, Sarepta, Zeller Coll.; Armenia; Asia Minor, Pontus, Amanus Mts., 1 ♀; Syria, Leech Coll., 1 ♂; Persia; W. Turkestan, Turcomania, Ferghana, Saisan, Issyk Kul; W. Siberia, Altai; E. Turkestan, Ili; E. Siberia, Ussuri. *Exp.* 30–34 millim.

Larva. Kirby, Butt. & Moths Eur. p. 160, pl. 34. f. 1; Hffm. Raup. p. 76, pl. 22. f. 7.

Blue-grey with two dorsal stripes spotted with yellow and black. Food-plants: *Sticta pulmonaria* and Lichens. 7–8.

*3533. Bryophila dolopis. (Plate CXXII. fig. 30.)

Bryophila dolopis, Püng. ined.

Head and thorax fuscous tinged with grey, the vertex of head grey; palpi blackish, white at base; legs brown mixed with grey, the tarsi ringed with white; abdomen grey suffused with brown, the crests blackish at tips. Fore wing fuscous tinged with grey, the antemedial area grey-white, some grey-white beyond the postmedial line on costal and inner areas; subbasal line blackish, produced outwards to a long tooth in cell and angled inwards on vein 1; antemedial line obliquely excurved and slightly sinuous, bent inwards to inner margin; orbicular indistinctly defined by blackish, rather elliptical; reniform represented by a small tuft of blackish scales; postmedial line strongly bent outwards below costa, then strongly excurved and slightly incurved at discal fold, strongly incurved below vein 5, some whitish points beyond it on costa; subterminal line indistinct, whitish, excurved below vein 7 and at middle and incurved at submedian fold where it is crossed by a slight black streak extending to termen; cilia with slight whitish lines at base and middle and pale brownish tips. Hind wing whitish uniformly suffused with red-brown; cilia white with a diffused red-brown line near base; the underside white, the costal and terminal areas irrorated with brown, a small brown discoidal spot.

Hab. W. Turkestan, Askabad, Kuschk, type † in Coll. Püngeler.
Exp. 30–34 millim.

3534. Bryophila contristans. (Plate CXXII. fig. 31.)

Bryophila contristans, Led. Wien. ent. Mon. 1857, p. 92; Staud. Cat. Lep. pal. p. 165.

Head and thorax brown slightly mixed with grey; palpi at base, pectus and legs whitish, the tibiæ partly suffused with brown; the tarsi brown with pale rings; abdomen orange fulvous, the crests brownish, the ventral surface brownish grey. Fore wing brown suffused with grey and tinged in parts with rufous; subbasal line represented by a dark striga from costa; antemedial line double, obsolescent on inner area, excurved to median nervure, then oblique, waved; orbicular red-brown defined by blackish, small, somewhat oblique elliptical, conjoined to the antemedial line; reniform very small, narrow, and indistinct, with a slight oblique dark striga above it from costa; postmedial line double, the outer line very indistinct, forming a small spot at costa, oblique to vein 5, then inwardly oblique to submedian fold and erect to inner margin, an oblique blackish spot beyond it below vein 2; traces of a minutely waved subterminal line; a terminal series of slight black points; cilia brown at base, greyish at tips. Hind wing fulvous red, the terminal area suffused with brown; a fine brown terminal line; cilia brown with pale line at base and whitish tips; the

underside whitish suffused with fulvous, a small blackish discoidal spot and curved postmedial line from costa to vein 2.

Ab. 1. Fore wing with the medial area suffused with brown below median nervure extending obliquely to inner margin near base.

Hab. Greece; W. Kurdistan; Asia Minor, Taurus, D'Emmick Coll.; Syria, Beirut, Zeller Coll. *Exp.* 32 millim.

3535. Bryophila petrea.

Bryophila petrea, Guen. Noct. i. p. 25, pl. 3. f. 3 (1852); Rmbr. Cat. Lep. S. And. pl. 7. f. 3; Staud. Cat. Lep. pal. p. 165.

♂. Head and thorax red-brown mixed with greyish and fuscous; palpi with some blackish on 2nd joint; pectus and legs grey irrorated with brown; fore tarsi blackish with pale rings; abdomen pale red, the ventral surface grey irrorated with brown. Fore wing greyish suffused with red-brown and irrorated with fuscous; subbasal line black defined by grey on outer side, angled outwards on subcostal and median nervures and inwards in cell, ending at vein 1; antemedial line black defined by grey on inner side, slightly angled inwards in submedian fold; orbicular defined by black at sides, rather oblique elliptical; reniform defined by black on inner side, faintly defined on outer, constricted at middle; medial line represented by an oblique black bar from costa and a faint waved line from cell to inner margin; postmedial line black defined by grey on outer side, oblique to vein 6, inwardly oblique from vein 5 to below 2, then erect to inner margin, some slight whitish points beyond it on costa; subterminal line greyish and oblique towards costa, then black, angled inwards at discal and submedian folds and excurved at middle; a terminal series of small black spots slightly defined by grey on inner side; cilia brown with a fine whitish line at base. Hind wing pale red; a fine dark terminal line; cilia brown with fine whitish line at base and whitish tips; the underside pale, the costal half irrorated with brown, the inner half tinged with red, a slight discoidal point and curved postmedial line from costa to vein 2, the termen tinged with brown from apex to vein 2.

Hab. Spain, Andalusia, 1 ♂. *Exp.* 28 millim.

*3536. Bryophila felina.

Hadena felina, Ev. Bull. Mosc. 1852, i. p. 156, & 1856, ii, pl. 2. f. 2 & iii. p. 20: Staud. Cat. Lep. pal. p. 166.

Head and thorax pale ash-grey; abdomen yellowish grey. Fore wing with the ground-colour whitish to ash-grey irrorated with dark scales, the basal and terminal areas blackish; subbasal line pale, angled outwards below costa and ending at vein 1; antemedial line angled outwards below costa, then oblique; claviform and orbicular large and dark, the former extending to cell, the

latter elliptical; reniform with brown centre and whitish annulus defined by black; postmedial line black defined by whitish on outer side below vein 2, bent outwards below costa, excurved to vein 4, then incurved; subterminal line whitish, excurved below vein 7 and at middle and angled inwards in discal and submedian folds; a terminal series of small dark lunules defined by whitish on inner side; cilia grey intersected with blackish. Hind wing fuscous, the basal area paler; cilia grey.

Hab. Armenia; W. Turkestan, Ferghana. *Exp.* 30 millim. This species is unknown to me.

3537. Bryophila granitalis. (Plate CXXII. fig. 32.)

Gerbatha granitalis, Butl. Trans. Ent. Soc. 1881, p. 194.
Bryophila glaucula, Staud. Rom. Mém. vi. p. 394, pl. v. f. 8 (1892); id. Cat. Lep. pal. p. 166.
Bryophila fraudatricula, Leech, Trans. Ent. Soc. 1900, p. 138, nec Hübn.

Head and thorax dark red-brown mixed with grey; abdomen red-brown, the crests fuscous. Fore wing red-brown mixed with grey and slightly irrorated with black; subbasal line black, oblique, from costa to vein 1; antemedial line double, the inner line indistinct, the outer strong, black, oblique to submedian fold, then erect; orbicular and reniform defined by brown, rather oblique elliptical; an indistinct, rather diffused, slightly curved brown medial line; postmedial line double filled in with grey, the inner line black, the outer indistinct, bent outwards below costa, obliquely excurved to vein 5, then obliquely bent inwards to submedian fold and erect to inner margin, some grey points beyond it on costa and a black streak from it to termen below vein 2; subterminal line faintly defined by black suffusion on inner side, oblique to below vein 7, excurved at middle and angled inwards in discal and submedian folds; a rather diffused black terminal line; cilia fuscous and grey with a blackish line through them. Hind wing red-brown, rather paler at base; cilia paler with a brownish line through them; the underside whitish suffused with red-brown, a dark discoidal spot and sinuous postmedial line, bent outwards below costa and incurved below vein 3.

Hab. E. Siberia, Ussuri; Japan, Hakodaté (*Andrews*), 3 ♂, Tokio (*Maries*), 1 ♂, 1 ♀ type, Yokohama (*Pryer*), 2 ♂, 3 ♀; Corea, Gensan (*Leech*), 1 ♀; C. China, Shanghai (*Pryer*), 1 ♂, 1 ♀, Kiukiang (*Pryer*), 1 ♂. *Exp.* 30 millim.

3538. Bryophila palliola.

Noctua palliola, Borkh. Eur. Schmett. iv. p. 184 (1792).
Noctua fraudatricula, Hübn. Eur. Schmett., Noct. f. 28 (1802); Treit. Schmett. Eur. (v) i. p. 70; Frr. Neue Beitr. pl. 170. ff. 2, 3; Boisd. Icones, pl. 71. f. 6; Staud. Cat. Lep. pal. p. 166.

Bryophila simulatricula, Guen. Noct. i. p. 26, pl. 3. f. 4 (1852); Oberth. Ét. Lép. Comp. i. p. 59, pl. iv. f. 52.

Head and thorax grey mixed with brown and black; tarsi black ringed with grey; abdomen grey-brown with the crests black. Fore wing grey tinged with brown and irrorated with black; a minutely waved black subbasal line from costa to submedian fold; antemedial line black defined by grey on inner side, minutely waved, oblique from costa to submedian fold; the medial area with a black streak below submedian fold; orbicular and reniform defined by blackish, the former irregularly rounded, the latter constricted at middle and angled inwards on median nervure, a pale patch between them in cell; an oblique black striga from middle of costa and traces of a waved line on inner area; postmedial line black defined by grey on outer side, bent outwards below costa, excurved to vein 4, then incurved and slightly angled outwards on vein 1, some slight pale points beyond it on costa and a black streak in submedian fold extending to termen; a faint waved grey subterminal line with slight black streaks beyond it on the veins; a terminal series of small black lunules; cilia brown mixed with grey and with a brown line near base. Hind wing pale red-brown with traces of discoidal spot and fine brown terminal line; cilia with a fine pale line at base; the underside grey irrorated with brown, a black discoidal lunule and indistinct postmedial line excurved to vein 5, then oblique.

Ab. 1. *simulatricula*. Smaller; fore wing greyish; hind wing white, the terminal area suffused with brown.—Spain; C. Italy.

Hab. Germany, Zeller and Leech Colls.; Austria, Frey and Leech Colls.; Hungary; Switzerland; Spain, Aragon, Castille; Italy; Finland; Russia, Sarepta, Zeller Coll. *Exp.* 28–34 millim.

Larva. Kirby, Butt. & Moths Eur. p. 160; Hfm. Raup. p. 76.

Similar to *B. divisa*, but the lateral line entire.

Genus **HARRISIMEMNA.**

Type.

Harrisimemna, Grote, Trans. Am. Ent. Soc. iv. p. 293 (1873)... *trisignata*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and fringed with hair in front, the 3rd short, frons smooth; eyes large, rounded; antennæ of male typically with very short branches; thorax clothed entirely with scales, the prothorax without distinct crest, the metathorax with immense crest of long spatulate scales; tibiæ moderately fringed with hair; abdomen with dorsal crests on each segment, the crest on 4th segment extremely large and the crests on three following segments rather large. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with short branches.

3539. Harrisimemna trisignata.

Grammophora trisignata, Wlk. ix. 29 (1856); Grote, Ill. Essay, 1882, p. 49, pl. 1. f. 3; Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 181; Smith, Cat. Noct. N. Am. p. 47.
Notodonta sexguttata, Harris, Ent. Corresp. 1869, p. 174, ff. 24–25.

♀. Head white; palpi black with some white at base and at extremity of 2nd joint; frons with black bar and black point above, vertex of head with black bar; tegulæ white at base with strong black line near base and large red-brown patches, the tips white; patagia and thorax red-brown with a few black scales; pectus and legs white, the tibiæ and tarsi banded with black; abdomen white dorsally irrorated with black and with black segmental lines, the crest on 4th segment red-brown. Fore wing silvery white; some slight black marks at base and an oblique streak from base of costa; a double waved black subbasal line from costa to submedian fold with black spot below its extremity and slight black markings on base of inner area, a round chocolate-brown patch beyond it on costa; antemedial line black, double, waved, angled inwards in submedian fold and on vein 1, the lines

Fig. 164.—*Harrisimemna trisignata*, ♂. $\frac{1}{1}$.

rather widely separated; the medial area irrorated with black; orbicular and reniform incompletely defined by black and with slight black centres, almost confluent, the former round; three black striæ from medial part of costa; postmedial line double, the lines widely separated, waved, oblique from costa to vein 4, angled outwards on veins 4, 3, then strongly incurved and angled outwards on vein 1, a large round chocolate-brown patch beyond it on costal area and another round patch below vein 3, and short curved black streaks above and below vein 5 and submedian fold; subterminal line absent; a terminal black band, its inner edge angled inwards at veins 5, 4, 3, and with a terminal series of black lunules defined by white lunules; cilia chequered white and black. Hind wing whitish suffused with red-brown; a terminal series of blackish lunules slightly defined by whitish; cilia white; the underside white slightly irrorated with red-brown, the base of costal area suffused with red-brown, a rather diffused red-brown antemedial line, blackish discoidal spot, postmedial line excurved to

vein 4, then incurved, broad diffused subterminal brown band from costa to submedian fold, and terminal series of black lunules.

Hab. Canada, Ontario, Orillia (*Bush*), 1 ♀ type; U.S.A., Massachusetts, New York, Long I., Rhode I., 2 ♀, Pennsylvania, 1 ♀, Wisconsin, Missouri. *Exp.* 36–38 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 183; Harr. Ent. Corresp. 1869, p. 174, f. 25.

Head shining black. Body compressed laterally, humped dorsally at joints 5 and 6, very strongly so at joint 12. Brownish black, washed with white on joints 3 and 4, 8 to 10, streaked with white on the bases of the feet. Tubercles black, bearing small tufts of inconspicuous white hairs. The cast head-cases of the previous stages remain attached by the hairs of the cervical shield, forming a long string. Food-plants: Ilex, Lilac.—H. G. D.

Sect. II. Antennæ of male ciliated.

*3540. Harrisimemna marmorata.

Harrisimemna marmorata, South, ined.

♂. Head and thorax red-brown with an olive tinge; frons with black bar and white band above it; tegulæ black at base edged with white above; patagia black and white at tips; pectus brown and white; legs white banded with black; abdomen brown mixed with white especially at extremity and below. Fore wing white; some black at base; subbasal line represented by two black striæ from costa and one from cell with a short fascia from its extremity; a large round chocolate spot below costa before the black antemedial line which is excurved in interspaces and angled inwards on

Fig. 165.—*Harrisimemna marmorata*, ♂. ½.

vein 1; medial area variegated black and white and with an ill-defined medial dentate line angled outwards at middle; postmedial line with its costal part curved outwards round the inner side of a large round chocolate patch on costa before apex, then interrupted, double, waved, incurved, its outer part curved round inner side of a round chocolate subterminal patch between vein 3 and submedian fold, the subapical patch with portions of the subterminal line at costa and above vein 5 round its outer side; cilia chequered brown and white. Hind wing whitish suffused with fuscous brown; cilia chequered brown and white; the underside white with diffused

oblique sinuous antemedial line, discoidal point, minutely waved postmedial line angled outwards below costa and excurved above inner margin and apical patch.

Hab. Japan, Nikko, type † in Coll. Wileman, also in Coll. Püngeler.
Exp. 32 millim.

Genus **CERMA**.

	Type.
Cerma, Hübn. Verz. p. 207 (1827)	*cora*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately scaled, the 3rd moderate; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed entirely with scales, the prothorax without crest, the metathorax with spreading crest; tibiæ moderately fringed with hair; abdomen with dorsal series of crests, the crest on 4th segment very large. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the medial area bluish-white ..... *cora*.
B. Fore wing with the medial area not bluish-white.
  a. Fore wing slightly tinged with green.
    a^1. Fore wing with the orbicular and reniform large irrorated with green scales ..... *marina*.
    b^1. Fore wing with the orbicular and reniform represented by a few black scales ..... *cuerva*.
  b. Fore wing not tinged with green.
    a^1. Fore wing irrorated with black ..... *galva*.
    b^1. Fore wing irrorated with black-brown mixed with orange-red ..... *olivacea*.

3541. Cerma cora.

Cerma cora, Hübn. Zutr. i. p. 14, ff. 59, 60 (1827); Smith, Cat. Noct. N. Am. p. 47.
Chariptera festa, Guen. Noct. ii. p. 57, pl. 7. f. 5 (1852).

Head white; palpi with black bands on 2nd and 3rd joints frons with black bar; black patches between and behind antennæ

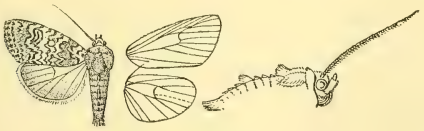


Fig. 166.—*Cerma cora*, ♂. ½.

which are black ringed with white; thorax olive-brown tinged with rufous, the tegulæ edged in front and behind and the patagia behind with black and white scales, the pro- and mesothorax with paired black spots; pectus white; legs banded black and white;

abdomen white suffused with brown, the crests on basal segments black, on 4th segment rufous. Fore wing olive-brown, the basal area white, the medial area bluish white except inner half below submedian fold; two small black spots at base; a double waved subbasal black line, excurved at middle and interrupted at submedian fold, with another oblique waved line beyond it from subcostal nervure to vein 1, the white extending to this outer line; a double irregularly waved antemedial black line filled in with white, the outer line interrupted in places; orbicular and reniform white defined by black, the former round, the latter with black lunule in centre; a double waved medial line, bent outwards in cell where the outer line is interrupted; a double postmedial line filled in with white, the inner line interrupted by the reniform, slightly bent outwards below costa, incurved at discal fold, minutely dentate at veins 4, 3, 2, then incurved and angled outwards at vein 1, some white points beyond it on costa; an irregularly dentate black subterminal line, angled outwards at vein 7 and middle, incurved at discal and submedian folds, a few white scales on its outer edge; a series of large terminal spots with white lunules on them; cilia chequered brown and white. Hind wing white usually tinged with brown, the terminal area suffused with brown narrowing to tornus; an indistinct discoidal spot and traces of postmedial line; a fine dark terminal line; cilia white with a brown line near base from apex to vein 2; the underside with the costal area irrorated with brown, a black discoidal spot and indistinct postmedial curved line, waved from costa to vein 5.

Hab. CANADA; U.S.A., 1 ♂, 3 ♀, Maine to Georgia. *Exp.* 34–36 millim.

*3542. Cerma marina.

Cerma marina, Smith, Can. Ent. xxxviii. p. 226 (1906).

Head and thorax brownish grey irrorated with black and the scales tipped with grey; patagia with some green; abdomen whitish suffused with grey. Fore wing dark brownish grey irrorated with black and amethystine scales, the medial area slightly darker; subbasal line grey defined on each side by black scales, from costa to submedian fold; antemedial line grey defined on outer side by black scales, oblique, irregularly sinuous, interrupted; claviform moderate, suffused with blackish; orbicular and reniform large, irrorated with green and incompletely defined by black, the former round, the latter constricted at middle; a broad diffused medial shade; postmedial line blackish defined by greyish on outer side, bent outwards below costa, then irregularly dentate, excurved to vein 4, then incurved; subterminal line pale, punctiform, irregular; a terminal series of black lunules; cilia intersected with grey. Hind wing dirty grey or whitish, traces of a subterminal line towards tornus; cilia darker; the underside fuscous towards base, a dark bar from middle of costa and postmedial line.

Hab. U.S.A., Arizona, Sta. Catalina Mts., Pinal Co. *Exp.* 26 millim. This species is unknown to me.

3543. Cerma cuerva. (Plate CXXIII. fig. 1.)

Cerma cuerva, Barnes, Can. Ent. xxxix. p. 10 (1907).

Head and thorax dark brown tinged with olive-green and irrorated with black and white; palpi black, yellowish white at tips; abdomen greyish fuscous. Fore wing dark brown tinged with olive-green and irrorated with black and white; subbasal line black, dentate, from costa to submedian fold; antemedial area paler; antemedial line black, dentate, erect; orbicular and reniform very faintly indicated by a few black scales; postmedial line black defined by whitish on outer side, bent outwards below costa, incurved below vein 4 and excurved at vein 1, some white points beyond it on costa; subterminal line hardly traceable; cilia chequered brown and white. Hind wing fuscous with dark discoidal point and diffused postmedial line.

Hab. Canada, Br. Columbia, Victoria; U.S.A., California (*Walsingham*), 1 ♂, 1 ♀. Figured from a drawing from type in Coll. W. Barnes.

*3544. Cerma galva.

Cerma galva, Streck. Lep. Rhop. & Het. Suppl. i. p. 5 (1899); Dyar, Cat. Lep. N. Am. p. 106.

♂. White; tegulæ and patagia edged with black and irrorated with black. Fore wing irrorated with black; subbasal and antemedial lines black; orbicular and reniform strongly defined by black; postmedial and subterminal lines black; cilia chequered black and white. Hind wing with greyish discoidal spot and postmedial line, the terminal area tinged with grey; cilia white.

Hab. U.S.A., New York, Clyde. *Exp.* 28 millim. This species is unknown to me; it is stated to have a very strong superficial resemblance to *Acronycta fragilis*, Guen.

3545. Cerma olivacea. (Plate CXXIII. fig. 2.)

Cerma olivacea, Smith, Trans. Am. Ent. Soc. xviii. p. 103 (1891); id. Cat. Noct. N. Am. p. 48.

♂. Head and thorax white mixed with black and some reddish orange; palpi blackish except at tips; tarsi black ringed with white; abdomen whitish suffused and irrorated with dark brown. Fore wing whitish thickly irrorated with black-brown mixed with some orange-red; subbasal line represented by indistinct double black striæ from costa and cell; antemedial line black defined by whitish on inner side, waved, slightly oblique, incurved in cell and submedian interspace; orbicular with dark centre and whitish annulus obscurely defined by blackish, round; reniform a narrow

whitish lunule obscurely defined by blackish; traces of a waved interrupted medial line; postmedial line black defined by whitish on outer side, strongly bent outwards below costa, then crenulate, strongly incurved below vein 3, some whitish points beyond it on costa; faint traces of a waved whitish subterminal line slightly defined by blackish on inner side and angled outwards at vein 7: a terminal series of black striæ with obscure whitish spots on their inner side; cilia chequered white and brown mixed with black. Hind wing whitish irrorated with brown, the terminal area suffused with brown; an indistinct discoidal spot and curved postmedial line; cilia white with an indistinct brownish line through them; the underside white irrorated with brown, a blackish discoidal spot, curved minutely waved postmedial line, and terminal series of slight lunules.

Hab. U.S.A., Colorado, Glenwood Springs (*Barnes*), 1 ♂, California, Sierra Nevada. *Exp.* 36 millim.

Genus **IAMBIA.**

Type

Iambia, Wlk. xxvii. 109 (1863) ..... *inferalis.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately scaled, the 3rd moderate; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed chiefly with scales, the prothorax without crest, the metathorax with spreading crest; tibiæ moderately fringed with hair; abdomen with dorsal crests on basal segments. Fore wing with the apex rounded, the termen very slightly crenulate and somewhat excised from vein 3 to tornus; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with two of the terminal points confluent and forming a lunule at discal fold.
  a. Fore wing with small wedge-shaped white marks before subterminal line above and below vein 4 ..... *nocturna.*
  b. Fore wing without small wedge-shaped white marks before subterminal line.
    a^1. Fore wing with pale streaks on veins 6 and 4 intersecting the dark postmedial patch ..... *harmonica.*
    b^1. Fore wing without pale streaks on veins 6 and 4 intersecting the dark postmedial patch ..... *thwaitesi.*
B. Fore wing without terminal lunule at discal fold.
  a. Fore wing whitish suffused with grey-brown.
    a^1. Fore wing with the inner half of terminal area not prominently white ..... *transversa.*
    b^1. Fore wing with the inner half of terminal area prominently white ..... *inferalis.*
  b. Fore wing with the ground-colour bright rufous ..... *rufescens.*

3546. **Iambia nocturna.** (Plate CXXIII. fig. 3.)

Callopistria nocturna, Hmpsn. J. Bomb. Soc. xiv. p. 203 (1902).

♀. Head and thorax silvery grey mixed with brown and black; tarsi black ringed with white; abdomen fuscous brown. Fore

wing fuscous brown irrorated with grey and black; subbasal line represented by double black striæ from costa filled in with grey and a small black spot below cell; antemedial line indistinct, double, black filled in with grey, waved, somewhat oblique, a small black spot before it above inner margin; orbicular and reniform with whitish annuli, the former small, elliptical, the latter narrow, angled inwards on median nervure and connected by a whitish streak with the former; traces of an oblique waved blackish line from lower angle of cell to inner margin; postmedial line double filled in with grey, bent outwards below costa, slightly excurved at discal fold, incurved and sinuous below vein 4; postmedial area blackish from costa to vein 4, with some grey points on costa and intersected by grey streaks above and below vein 6, with small wedge-shaped white marks above and below vein 4; subterminal line grey-white, angled inwards at discal and submedian folds and excurved at middle; a terminal series of black lunules slightly defined on inner side by grey-white; cilia with a fine pale line at base. Hind wing black-brown with a terminal series of black striæ interrupted by white points at the veins; cilia greyish with a fine white line at base followed by a dark line; the underside grey tinged with brown and irrorated with dark brown, a black discoidal spot and diffused curved minutely waved postmedial line, the terminal area fuscous.

Hab. Madras, Cuddapah, Horseleykonda (*Campbell*), 2 ♀ type. *Exp.* 32 millim.

3547. Iambia harmonica. (Plate CXXIII. fig. 4.)

Callopistria harmonica, Hmpsn. J. Bomb. Soc. xiv. p. 203 (1902).

♂. Head and thorax grey mixed with deep purplish red and brown; palpi with purplish red patches on 1st and 2nd joints; tegulæ purplish red with whitish stripes near dorsum and whitish edges; pectus and legs whitish, the tibiæ and tarsi banded with purplish red; abdomen grey tinged with rufous and irrorated with red. Fore wing pale olive-brown largely mixed with purplish grey to postmedial line; subbasal line represented by a black-brown spot on costa followed by a striga and two small spots below the cell; black-brown spots in and below the cell before the antemedial line, which is represented by double spots on costa, then deep red, double, oblique, slightly sinuous; claviform represented by a few black scales at extremity; orbicular and reniform grey defined by olive and white at sides, open above and below, a black-brown patch between them in cell; two black-brown spots on middle of costa and a deep red incurved line from cell to inner margin; postmedial line white defined on each side by deep red, bent outwards below costa and incurved below vein 4, some greyish beyond it before the olive-brown terminal area; postmedial area with large black-brown patch from costa to vein 3 intersected by olive streaks on veins 6 and 4 and bounded by the fine whitish sub-

terminal line, which is incurved at discal and submedian folds and with small red spots before it from vein 2 to inner margin; a terminal series of small black-brown spots slightly defined on inner side by white, the spot at discal fold bar-shaped and the one above tornus obsolescent; cilia grey with fine white lines at base and middle and red-brown patch at discal fold. Hind wing fuscous brown with some slight dark lunules on termen between veins 7 and 2; cilia whitish with a brown line through them; the underside whitish irrorated with crimson and the costal and terminal areas suffused with crimson, a black discoidal spot, indistinct waved postmedial line excurved below costa, and terminal series of small black lunules slightly defined by whitish.

Hab. Sikhim, 1800′ (*Dudgeon*), 1 ♂ type. *Exp.* 30 millim.

3548. Iambia thuaitesi.

Methorasa thwaitesi, Moore, Lep. Ceyl. iii. p. 61, pl. 151. f. 2 (1884); Hmpsn. Moths Ind. ii. p. 262.

Head and thorax dark cupreous brown mixed with grey-white; palpi whitish with black band on 2nd joint; frons whitish; tibiæ and tarsi banded white and brown; abdomen reddish brown, the ventral surface whitish. Fore wing reddish brown mixed with whitish, with a broad diffused blackish band on postmedial area from costa to vein 4, then on inner side of postmedial line to inner margin; subbasal line represented by a dark spot; antemedial line very indistinct, waved, with a brownish mark before it on costa; orbicular and reniform greyish indistinctly defined by dark

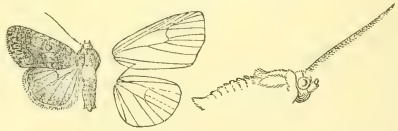


Fig. 167.—*Iambia thuaitesi*, ♂. ½.

brown, the former round; postmedial line brown slightly defined on each side by whitish and with a black mark before it on costa, slightly bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some white points beyond it on costa; traces of a waved whitish subterminal line with some blackish dentate marks before it from costa to vein 4; terminal area whiter from vein 4 to tornus; a terminal series of small black lunules, the pair at discal fold confluent and forming a larger lunule. Hind wing cupreous brown; cilia greyish mixed with brown and with a darker line at middle; the underside whitish suffused and irrorated with cupreous brown, a slight black discoidal lunule, traces of a postmedial line defined by whitish on outer side, and terminal series of small triangular black spots.

Hab. Nigeria, Borgu, Yelwa L. (*Migeod*), 1 ♀ ; Br. E. Africa (*Betton*), 1 ♀ ; Bombay, N. Kanara, Karwar (*Bell*), 2 ♂ ; Ceylon (*Thwaites, Lindesay*), 2 ♂, 1 ♀ type, N.W. Province (*Green*), 1 ♂, Puttalam (*Pole*), 1 ♀. *Exp.* 26–32 millim.

3549. Iambia transversa.

Tycracona transversa, Moore, Lep. Atk. p. 95, pl. 4. f. 5 (1882); Hmpsn. Moths Ind. ii. p. 262.

Head and thorax brown mixed with grey ; palpi blackish, white at base and extremity of 2nd joint ; tibiæ and tarsi banded blackish and white ; abdomen grey-brown, the ventral surface whitish. Fore wing grey-brown irrorated with some white and black scales : subbasal line indistinct, waved, from costa to submedian fold where it has some whitish before it ; antemedial line indistinct, double, waved, with a black spot at costa and mark before it above inner margin ; orbicular and reniform with indistinct pale annuli, the former round, the latter with straight inner edge and some dark brown before it in cell ; medial line with black point on costa and oblique line from reniform to inner margin, with dark mark beyond it in submedian interspace ; postmedial line indistinctly double, filled in with whitish towards costa and with small black spots before it at costa and from vein 6 to inner margin, bent outwards below costa, excurved to vein 4, then oblique, some whitish points beyond it on costa ; subterminal line indistinct, whitish defined on inner side by a series of dentate black marks and a large lunule above and below vein 5, excurved below vein 7 and at middle ; a terminal series of black lunules ; cilia with a blackish line through them. Hind wing reddish brown, the cilia whitish with a brown line through them ; the underside whitish tinged and irrorated with brown, a brown discoidal spot, rather diffused postmedial line bent inwards to costa and excurved at middle, and terminal series of points with whitish marks before them.

Hab. Mashonaland, Umtali (*Marshall*), 1 ♂ ; C. Colony, Annshaw (*Miss F. Barrett*), 1 ♀ ; Japan, Yokohama (*Pryer*), 1 ♂ ; C. China, Ichang (*Mrs. Pratt*), 1 ♀ ; Sikhim (*Dudgeon*), 2 ♀ ; Bhután (*Dudgeon*), 1 ♀ ; Madras, Cuddapah (*Campbell*), 1 ♂ ; Pulo Laut (*Doherty*), 1 ♂. *Exp.* 28–32 millim.

3550. Iambia inferalis. (Plate CXXIII. fig. 5.)

Iambia inferalis, Wlk. xxvii. 109 (1863).
Bryophila velutina, Feld. Reis. Nov. pl. 100. f. 14 (1874).

Head and thorax white mixed with black-brown ; palpi white with black patch on side of 2nd joint ; frons with black bar ; tarsi black ringed with white ; abdomen brownish white irrorated with fuscous. Fore wing bluish white almost entirely suffused with black-brown to postmedial line and above vein 5 to subterminal line and at costa to apex ; a diffused oblique black fascia from

costa near base to antemedial line at submedian fold; antemedial line indistinct, double filled in with whitish, oblique, waved, angled inwards at vein 1; orbicular and reniform with their centres defined by blackish and with faint incomplete white annuli, the former round; postmedial line slightly defined by white on outer side, strongly bent outwards below costa, excurved to vein 4, then very oblique, some slight white points beyond it on costa; an indistinct, minutely dentate subterminal line, oblique below vein 4, black streaks from it to termen above and below vein 5; a terminal series of small triangular black spots. Hind wing fuscous brown with fine lunulate black terminal line; cilia white mixed with fuscous at tips; the underside white irrorated with black and some red, a black discoidal spot, curved minutely waved postmedial line, and terminal series of small lunules.

Hab. Natal, Durban (*Gueinzius*, *Gooch*), 1 ♂, 2 ♀. *Exp.* 32 millim. Type† ♀ *velutina* in Coll. Rothschild.

*3551. Iambia rufescens. (Plate CXXIII. fig. 6.)

Caradrina rufescens, Hmpsn. Moths Ind. ii. p. 263 (1894).

♂. Head and thorax bright rufous mixed with some whitish and brown; palpi banded with brownish; antennæ brown; pectus whitish; tarsi blackish ringed with white; abdomen ochreous tinged with brown and slightly irrorated with black, the basal crest rufous. Fore wing bright rufous; subbasal line represented by slight blackish marks on costa and below cell; antemedial line double, brownish, oblique, waved, with blackish spot on the outer line at costa; orbicular small, faintly defined by brown, produced to a slight point on outer side; reniform faintly defined by brown and by black points except on outer side; medial line indistinct, dark, oblique from costa to reniform and waved from lower angle of cell to inner margin; postmedial line indistinct, double filled in with whitish, bent outwards below costa, then minutely waved and with minute black points on each side, slightly angled inwards at discal fold and incurved below vein 4, some whitish points beyond it on costa; subterminal line indistinct, pale, defined on inner side by a diffused blackish patch on costal area, then by blackish points, minutely waved; a terminal series of black points; cilia rufous mixed with dark brown. Hind wing reddish ochreous suffused with brown; a slight discoidal spot; cilia whitish tinged with rufous at apex and middle and with slight brown line near base; the underside whitish, the costal and terminal areas irrorated with brown, a medial brown line from costa to lower angle of cell, an indistinct minutely waved postmedial line with minute dark streaks on the veins, a subterminal series of minute blackish streaks on the veins.

Hab. Ganjam, Berhampur (*Minchin*), type† ♂ in Coll. Rothschild. *Exp.* 24 millim.

Genus **IAMBIODES**, nov.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and rather broadly scaled, the 3rd moderate; frons with large prominence with raised corneous walls at extremity; eyes large, round; antennæ of female somewhat laminate; thorax clothed almost entirely with scales, the prothorax without crests, the mesothorax with small paired crests, the metathorax with decumbent crest; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3552. Iambiodes anormalis.

Tarache anormalis, Hmpsn. J. Bomb. Soc. xvii. p. 474 (1906).

♀. Head and thorax red-brown mixed with some black and whitish scales, the mesothorax with pair of small rufous crests; palpi whitish in front; pectus whitish; tarsi fuscous ringed with white; abdomen fuscous mixed with some greyish, the basal crest pale rufous, the ventral surface whitish irrorated with brown. Fore wing with the basal area greyish red-brown irrorated with some white-tipped black scales; an indistinct curved subbasal line

Fig. 168.—*Iambiodes anormalis*, ♀. ½.

from costa to submedian fold and with black point at costa; antemedial line indistinct, double, oblique, waved, with black spot at costa and slight black marks before it above and below vein 1; orbicular rather triangular, with fuscous centre and ochreous annulus defined by black except below; reniform bluish fuscous with slight ochreous annulus incompletely defined by black; an indistinct black medial line oblique from costa to reniform and waved below the cell, reddish towards inner margin; the outer half of medial area suffused with bluish fuscous to submedian fold; postmedial line double, brown filled in with ochreous, white with two black spots at costa, bent outwards below costa, then minutely waved, slightly incurved at discal fold and incurved below vein 4, a blue-black patch beyond it on costal area with whitish points on costa and black streaks on the veins, slight black streaks above and below vein 5, an ochreous mark above vein 4, then black points in the interspaces to inner margin; subterminal line whitish, hardly traceable except towards costa, excurved below

vein 7 and at middle; a terminal series of small black lunules defined by a waved white line, with larger lunule at discal fold; cilia rufous, blackish at middle and with fine waved white line through them. Hind wing dark brown with indistinct discoidal lunule and terminal series of slight lunules, cilia whitish tinged with rufous and with brown line near base; the underside irrorated with whitish, the discoidal lunule defined by whitish, an indistinct curved postmedial line.

Hab. Madras, Gooty (*Campbell*), 1 ♀ type. *Exp.* 32 millim.

Genus **PARIAMBIA**, nov.

Type, *P. aprepes*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching to about vertex of head and moderately scaled, the 3rd moderate; frons with rounded prominence with vertical corneous ridge down middle; eyes large, round; antennæ of male minutely ciliated; thorax clothed almost entirely with scales and without crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3553. Pariambia aprepes, n. sp.

♂. Head pale rufous, the palpi blackish at tips; thorax fuscous brown mixed with greyish; pectus and legs brownish white, the tibiæ and tarsi banded with blackish; abdomen ochreous brown, the ventral surface whitish. Fore wing brownish grey largely suffused with fuscous, the terminal area paler; subbasal line represented by a slight blackish striga from costa; antemedial

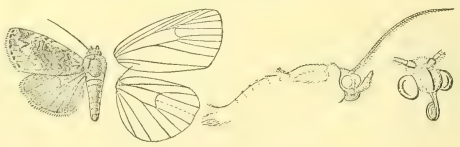


Fig. 169.—*Pariambia aprepes*, ♂. 2/1.

line indistinctly double filled in with whitish, angled outwards below costa and in submedian fold; orbicular and reniform with whitish annuli slightly defined by black scales, the former small, round; an indistinct waved black medial line; postmedial line double, black filled in with whitish, bent outwards below costa, slightly incurved at discal fold and incurved below vein 4, some pale points beyond it on costa; subterminal line indistinct, pale, defined on inner side by blackish and with blackish patch before it on costal area, excurved below vein 1 and at middle; a terminal

series of small black lunules, those above and below discal fold conjoined; cilia blackish with a fine palé line at base. Hind wing fuscous brown, the cilia whitish with a dark line through them; the underside whitish irrorated with brown, a dark discoidal spot, traces of postmedial line and terminal series of striæ.

Hab. Ceylon, Willawaya (*Alston*), 1 ♂ type. *Exp.* 32 millim.

Genus AUCHA.

	Type
Aucha, Wlk. xiii. 1137 (1857)	*velans.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching vertex of head and smoothly scaled, the 3rd moderate; frons smooth; eyes large, round; antennæ of male minutely ciliated; thorax clothed almost entirely with scales, the prothorax without crest, the metathorax with large flattened crest; tibiæ smoothly scaled; abdomen with flattened dorsal crest at base only. Fore wing with the apex rounded; the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with white patches on medial area.
  a. Fore wing with white fascia below base of cell and patch on costa before postmedial line ..... *variegata.*
  b. Fore wing without white fascia below base of cell or patch on costa before postmedial line ..... *flavomaculata.*
B. Fore wing without white patches on medial area.
  a. Hind wing reddish ochreous, the costal and terminal areas suffused with brown.
    a^1. Fore wing olive-brown ..... *tenebricosa.*
    b^1. Fore wing grey-brown ..... *triphænoides.*
  b. Hind wing with orange patch below and beyond end of cell.
    a^1. Hind wing with the orange patch not bent upwards beyond end of cell ..... *vesta.*
    b^1. Hind wing with the orange patch bent upwards beyond end of cell.
      a^2. Fore wing with the ante- postmedial and terminal areas strongly suffused with grey ..... *nectens.*
      b^2. Fore wing uniform dark brown slightly suffused with grey ..... *velans.*
  c. Hind wing nearly uniform dark brown.
    a^1. Fore wing with the postmedial line oblique from below costa to inner margin ..... *villiana.*
    b^1. Fore wing with postmedial line excurved from below costa to vein 4, then incurved ..... *minor.*

3554. Aucha variegata.

Acontia variegata, Oberth. Diag. Lép. Askold. p. 15 (1879); id. Ét. Ent. v. p. 81, pl. 3. f. 7 (1880); Staud. Cat. Lep. pal. p. 203.

♀. Head and thorax white slightly mixed with red-brown; palpi red-brown behind; antennæ red-brown; tibiæ and tarsi slightly banded with brown; abdomen yellow, with diffused brown bands, the anal tuft tinged with rufous, the ventral surface whitish

banded with red-brown. Fore wing white, some brown and fuscous suffusion above basal half of inner margin; subbasal line oblique, slightly waved, from costa to submedian fold; antemedial area rufous, with some fuscous and grey irroration from costa to submedian fold; antemedial line blackish defined by white on inner side, minutely waved, from costa to submedian fold; claviform small, white defined by red-brown and fuscous; orbicular and reniform rufous slightly defined by fuscous and with some white in centres, the former round with fuscous and rufous patch above it on costa, the latter with rufous patch beyond lower angle of cell; a rather diffused curved brown medial line from cell to inner margin; postmedial line rufous and fuscous, bent outwards below costa, then erect and minutely waved, defined by white on outer side except between veins 5 and 3; postmedial area rufous irrorated with fuscous, with two slight white striæ from costa; an irregular subterminal white patch from apex to vein 6, narrowing below and followed by a series of lunulate white spots with small black spots on their outer side between veins 6 and 2; terminal area rufous and greyish; cilia rufous mixed with some fuscous, and with series of small white spots from apex to vein 2. Hind wing fuscous brown, the basal area yellowish, the terminal area darker; a diffused brown medial band followed by two confluent pale yellow patches between veins 4 and 1; cilia pale yellow; the underside pale yellow, the costal area whitish, a broad brown terminal band with white patch at apex and strongly sinuous inner edge, a diffused medial band.

Ab. 1. Fore wing tinged with yellow, the dark areas brown instead of rufous.

Hab. E. Siberia, Amurland, 2 ♀, Blagoveschensk, 2 ♀; Ussuri. *Exp.* 30 millim.

3555. Aucha flavomaculata.

Acontia flavomaculata, Oberth. Diag. Lép. Askold. p. 16 (1879); id. Et. Ent. v. p. 82, pl. 3. f. 8 (1880); Staud. Cat. Lep. pal. p. 203.

♂. Head and thorax reddish brown mixed with white; abdomen brown with pale yellow bands; anal tuft tinged with rufous, the ventral surface whitish irrorated with brown. Fore wing yellowish tinged with grey and thickly irrorated with brown, the terminal area wholly suffused with brown; a white mark at base of costa bounded by the dark subbasal line defined by white on outer side, from costa to submedian fold; antemedial line indistinct, dark, defined by whitish on inner side at costa and below submedial fold, curved, slightly incurved above vein 1, a lunulate yellowish-white patch beyond it above vein 1; claviform small, faintly defined by brown; orbicular and reniform very indistinct, yellowish, faintly defined by brown, the former round; postmedial line brown, defined by white on outer side towards costa and below submedian fold, and slightly by yellowish at middle, bent outwards below costa, then minutely waved, slightly incurved at discal fold and incurved

below vein 4, some white points beyond it on costa; subterminal line with two small white spots below costa and two above inner margin, between those points brown, diffused, slightly waved; cilia brown with yellowish line at base and series of white points. Hind wing fuscous brown, the basal area greyish; traces of a diffused dark medial band with two faint confluent greyish patches beyond it between veins 4 and 1; cilia white, brownish at tips from apex to vein 4; the underside with the basal half whitish suffused with brown, the terminal half brown with white patch at apex, a diffused whitish medial band expanding into a patch between veins 4 and 2.

Hab. E. SIBERIA, Amurland, 3 ♂, Ussuri. *Exp.* 28 millim.

This is probably the ♂ of *A. variegata.*

*3556. Aucha tenebricosa.

Triphæna tenebricosa, Saalm. Lep. Madag. p. 288, f. 174 (1891).

♀. Head and thorax olive-brown; abdomen rufous. Fore wing olive-brown with a greyish tinge; subbasal line double at costa, then waved, extending to inner margin; antemedial line double, waved, oblique; orbicular defined by brown and with dark point in centre, small, round; reniform defined by dark brown; a waved medial line; postmedial line double, slightly bent outwards below costa, then oblique, dentate; subterminal line defined by brown suffusion on inner side, dentate, excurved below vein 7 and at middle; a fine dark terminal line. Hind wing reddish ochreous, the costal and terminal areas suffused with brown; a brown discoidal lunule; cilia yellowish.

Hab. MADAGASCAR, Nossibé. *Exp.* 34 millim. This species is unknown to me.

3557. Aucha triphænoides. (Plate CXXIII. fig. 7.)

Briarda triphænoides, Wlk. xxxiii. 895 (1865).

Head and thorax grey-brown slightly irrorated with dark brown; palpi whitish at base; pectus and legs whitish tinged with brown, the fore tibiæ and tarsi banded with fuscous; abdomen pale dull orange-red, the ventral surface whitish. Fore wing grey-brown thickly irrorated and suffused with black; subbasal line represented by a minute V-shaped blackish mark in base of cell; antemedial line indistinct, double from costa to submedian fold; irregularly waved; orbicular slightly tinged with fulvous, indistinctly defined by blackish and with blackish point in centre, small, round; reniform narrow, faintly tinged with fulvous, slightly defined by blackish on inner side and with two black points on outer; an indistinct diffused sinuous medial line, oblique from costa to lower angle of cell, then inwardly oblique; postmedial line diffused towards costa, then double, waved, interrupted between veins 5 and 2, then oblique; subterminal line greyish, defined on inner side by fuscous suffusion, excurved at vein 7 and middle; a

terminal series of small blackish spots. Hind wing dull reddish orange, the veins and costal area tinged with brown; a broad fuscous terminal band with diffused sinuous inner edge, leaving the termen narrowly orange, expanding into a patch in submedian interspace; cilia whitish tinged with orange, dark at apex; the underside whitish tinged with orange, a slight discoidal spot and diffused fuscous subterminal band.

Hab. Queensland, Moreton Bay (*Diggles*), 1 ♀ type, Brisbane (*Turner*), 1 ♀; W. Australia (*Diggles*), 1 ♂. *Exp.* 34 millim.

3558. Aucha vesta. (Plate CXXIII. fig. 8.)

Aucha vesta, Swinh. A. M. N. H. (7) vii. p. 493 (1901).

♂. Head and thorax reddish brown suffused with grey; shoulders with dark stripes; a dark band across middle of thorax; pectus and legs whitish tinged with brown, the fore tibiæ and the tarsi with dark brown bands; abdomen orange-brown, the ventral surface white tinged with ochreous at extremity. Fore wing reddish brown suffused with grey, especially on basal and postmedial areas; subbasal line represented by blackish points below costa and in cell; antemedial line double, filled in with grey, the inner line less distinct, angled outwards below costa and inwards on vein 1 where there is some black suffusion before it; claviform represented by a black lunule on the antemedial line; orbicular grey defined by black and with black spot in centre, its outer part tinged with rufous; reniform with rufous bar followed by two black spots on its inner side and three black points on its outer; a diffused black-brown medial shade with slight rufous mark on it in cell; postmedial line indistinct, bent outwards below costa, then oblique, dentate, the costa beyond it with slight whitish streaks; subterminal line grey-white defined on inner side by black suffusion, dentate, angled outwards below veins 7 and 4; a series of blackish points on termen from apex to below vein 4. Hind wing black-brown, the inner area suffused with orange except towards tornus; an orange fascia in lower part of cell, expanding beyond the cell and extending to near termen; a slight discoidal black lunule; cilia orange; the underside with the orange and orange-suffused areas pale yellow.

Hab. Queensland, Coomoo, 1 ♂ type. *Exp.* 38 millim.

3559. Aucha nectens. (Plate CXXIV. fig. 9.)

Triphæna nectens, Wlk. xv. 1704 (1858); Hmpsn. Moths Ind. ii. p. 194.
Briarda latipennis, Wlk. xxxiii. 894 (1865).

♀. Head and thorax dark brown irrorated and suffused with grey, the tegulæ and prothorax with faint irregular dark bands; pectus and legs whitish irrorated with brown, the tarsi fuscous ringed with whitish; abdomen brown with an orange tinge, the ventral surface whitish. Fore wing dark brown suffused with grey;

subbasal line indistinct, double, waved, from costa to submedian fold; antemedial line very indistinct, double, waved, oblique from costa to submedian fold; orbicular small, round, slightly defined by dark brown; reniform indistinctly defined by dark brown on inner side only; postmedial line double, bent outwards below costa, then waved, incurved below vein 4, some slight pale points beyond it on costa; subterminal line greyish slightly defined by fuscous suffusion on inner side, excurved below costa and at middle; a terminal series of small blackish spots. Hind wing black-brown; an oblique orange band beyond the cell from vein 6 to 2, angled inwards below end of cell; a slight orange streak on middle of vein 1; some orange on termen in submedian interspace; cilia orange, with series of slight brown spots from apex to vein 2; the underside with the costal area greyish, the cell and area below it and the inner area tinged with orange, the terminal area fuscous.

Ab. 1. *latipennis*. Fore wing much greyer with a blackish patch on costal area beyond the subbasal line, a diffused black medial shade and prominent black suffusion before the subterminal line from costa to vein 3. Hind wing with the band beyond the cell narrower and tinged with rufous.

Hab. India, 2 ♀ type; Bombay; Penang (*Lloyd*), 1 ♀ type *latipennis*. *Exp.* 42–46 millim.

3560. Aucha velans.

Aucha velans, Wlk. xiii. 1138 (1857); Hmpsn. Ill. Het. B. M. ix. p. 94, pl. 162. f. 15; id. Moths Ind. p. 194.

Head and thorax dark brown slightly tinged with grey; pectus whitish tinged with brown, the tarsi fuscous ringed with white; abdomen dull red-brown, the ventral surface whitish. Fore wing dark brown suffused with grey and slightly irrorated with blackish; subbasal line represented by slight double black striæ from costa; antemedial line indistinct, double, waved; claviform moderate, black; orbicular with faint dark outline and small black spot in

Fig. 170.—*Aucha velans*, ♂. ½.

centre, round; reniform represented by two blackish bars; a medial shade from costa to reniform and oblique sinuous line from lower angle of cell to inner margin; postmedial line double, bent outwards below costa, then minutely waved, oblique below vein 4 and with blackish mark before it in submedian fold, some whitish points beyond it on costa; subterminal line indistinct, greyish,

defined on inner side by blackish suffusion, excurved below vein 7 and at middle where there are more distinct black marks before it; a terminal series of small black spots with a slight greyish line before them. Hind wing black-brown with a reddish tinge; an oblique orange band beyond the cell between veins 6 and 2, slightly angled inwards below the cell; some orange on termen in submedian interspace; cilia chequered orange and fuscous to vein 2, then orange, tipped with fuscous below submedian interspace; the underside grey-brown, the terminal area darker, a diffused discoidal spot, some yellowish below end of cell and on termen in submedian interspace.

Ab. 1. Fore wing less suffused with grey; hind wing with the orange beyond the cell and on termen brighter.—Burma.

Hab. Ceylon (*Templeton*), 1 ♂ type, Trincomali (*Yerbury*), 1 ♂, 1 ♀; Burma, Rangoon (*Scott*), 1 ♂. *Exp.* 38 millim.

3561. Aucha villiana. (Plate CXXIII. fig. 10.)

Dinumma villiana, Swinh. A. M. N. H. (6) xii. p. 263 (1893); Semper, Schmett. Phil. p. 526, pl. lx. f. 5.

Head and thorax dark brown tinged with greyish; pectus and legs fuscous and grey, the tarsi fuscous ringed with grey; abdomen dull reddish brown, the ventral surface whitish suffused with brown towards extremity. Fore wing dark brown suffused with grey; subbasal line black, double, waved, from costa to submedian fold; antemedial line double, waved, angled outwards below costa; orbicular defined by black and with black point in centre, small, round; reniform defined by blackish and with black bar in centre, elliptical; a diffused black medial shade from costa to reniform and oblique waved line from lower angle of cell to inner margin; postmedial line double, bent outwards below costa, then waved, oblique below vein 4; subterminal line greyish defined on inner side by black suffusion, angled outwards at veins 7, 6, 4, 3, and incurved at discal fold and below vein 3: a terminal series of small black spots. Hind wing red-brown with dark terminal band with irregular diffused inner edge; cilia brownish grey; the underside grey-brown with a reddish tinge, the terminal area darker, a slight diffused discoidal spot and indistinct greyish postmedial line excurved below costa.

Hab. Singapore (*Ridley*), 4 ♂, 3 ♀, type; Borneo, Kuching (*Shelford*), 1 ♂; Philippines. *Exp.* 38–44 millim.

3562. Aucha minor, n. sp. (Plate CXXIII. fig. 11.)

♀. Head and thorax dark brown tinged with grey; pectus and legs greyer, the tarsi slightly ringed with white; abdomen grey-brown with a reddish tinge. Fore wing dark chocolate-brown largely suffused with grey; traces of a double curved sinuous antemedial line with an oblique dark brown shade beyond it from costa to median nervure; orbicular and reniform absent; an indistinct medial line, oblique from cell to inner margin; postmedial line

indistinct, brown, dentate, oblique from costa to vein 6, slightly angled inwards in discal fold, incurved below vein 4, a triangular red-brown patch beyond it on costal area with some grey points on the costa; an indistinct waved brown subterminal line; a terminal series of slight brown spots. Hind wing red-brown with the terminal area dark brown; cilia pale rufous with a red-brown line near base; the underside greyish suffused with rufous except on inner area to the indistinct curved postmedial line, a slight discoidal lunule.

Hab. Bombay, 1 ♀, Karwar (*T. R. Bell*), 1 ♀ type. *Exp.* 26 millim.

Genus **POLYPHÆNIS.**

	Type.
Polyphænis, Boisd. Ind. Meth. p. 128 (1840)	*sericata.*
Triphœnopsis, Butl. A. M. N. H. (5) i. p. 163 (1878)	*lucilla.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair in front, the 3rd typically moderate; frons smooth; eyes large, round; antennæ of male typically bipectinate with short branches, the apical part serrate; thorax clothed almost entirely with scales, the prothorax with spreading crest, the metathorax with divided crest; abdomen with dorsal series of crests. Fore wing with the apex rounded, the termen evenly curved, crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with rather long branches to apex.

3563. Polyphænis xanthochloris.

Polyphænis xanthochloris, Boisd. Ind. Meth. p. 128 (1840); Herr.-Schäff. Eur. Schmett., Noct. ff. 74, 75; Staud. Cat. Lep. pal. p. 184.
Noctua alliacea, Germ. Faun. Ins. Eur. xxii. pl. 20 (1842); Herr.-Schäff. Eur. Schmett. ii. p. 257.

♂. Head and thorax brown mixed with white, ochreous, red-brown and black; palpi dark brown at sides; frons with lateral dark brown bars; tegulæ with dark tips; tarsi dark brown ringed

Fig. 171.—*Polyphænis xanthochloris*, ♂. ½.

with white; abdomen grey irrorated with brown and with grey-brown bands. Fore wing pale grey-green irrorated with some

black, the postmedial area slightly suffused with fuscous; subbasal line represented by slight double black striæ from costa; antemedial line double, erect, waved, obsolescent on costal half; orbicular very small, defined by black, irregularly rounded; reniform dirty whitish defined by black, constricted at middle; a diffused fuscous medial line oblique from costa to below cell, then incurved; postmedial line double, slightly bent outwards below costa, then dentate, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line indistinct, whitish grey, defined on inner side by dark suffusion at costa, a dentate brown line at middle and dentate black marks below veins 3 and 2, dentate at veins 7, 6, 4, 3, 2, 1; a terminal series of small black lunules; cilia chequered whitish and fuscous. Hind wing yellow, with terminal fuscous brown band with waved inner edge, wide at apex, narrowing to tornus; some yellow on termen in submedian interspace; cilia whitish with series of fuscous spots; the underside with the costal and terminal areas whitish irrorated with brown, a diffused fuscous subterminal band.

Hab. Spain; Sicily, 1 ♂. *Exp.* 50 millim.

Sect. II. (*Polyphænis*). Antennæ of male bipectinate with very short branches, the apical part serrate.

3564. Polyphænis sericata.

Noctua sericata, Esp. Schmett. iv. pl. 108. f. 4 (1787); Staud. Cat. Lep pal. p. 184.
Noctua sericina, Esp. Schmett. iv. p. 183 (1790); Mill. Icones, pl. 104. f. 2.
Noctua prospicua, Hübn. Eur. Schmett., Noct. f. 108 (1802); Dup. Lép. Fr. vi. p. 398, pl. 97. f. 4; Frr. Neue Beitr. pl. 213.
Polyphænis nebulifera, Guen. Ann. Soc. Ent. Fr. 1841, p. 245.
Polyphænis propinqua, Staud. Iris, viii. p. 298 (1895).
Polyphænis viridata, Ragusa, Nat. Sicil. xvii. p. 18, pl. i. f. 1 (1904).

Head and thorax brown mixed with grey and some fuscous; sides of palpi and frons black; vertex of head with black patch; antennæ black; tegulæ with black line near tips; patagia with

Fig. 172.—*Polyphænis sericata*, ♂. ½.

black scales on edges; tarsi fuscous with pale rings; abdomen grey-brown tinged with yellow, the crests fuscous, the anal tuft fulvous. Fore wing greyish suffused and thickly irrorated with red-brown, the terminal area greyer, the basal area browner except

at base of inner margin; subbasal line double, blackish, minutely waved, from costa to vein 1; antemedial line double, minutely waved, angled inwards above vein 1 and outwards above inner margin; claviform large, defined by dark brown; orbicular and reniform defined by dark brown, the former small, round, the latter large; medial line oblique, dark from costa to lower angle of cell, then indistinct and waved; postmedial line double filled in with whitish, bent outwards below costa, then strongly dentate and produced to black points on the veins, excurved to vein 4, then incurved, some pale points beyond it on costa, a diffused blackish streak from it to termen in submedian fold; subterminal line grey defined on inner side by blackish except towards costa where the blackish is bent outwards to apex, dentate, a slight black streak from it to termen below vein 4; a terminal series of small black lunules: cilia with a waved dark line through them. Hind wing reddish orange; a slight oblique brownish discoidal bar; traces of a minutely waved postmedial line; a blackish terminal band broad towards costa where it becomes brownish and is diffused inwards, narrowing to tornus; cilia white, tinged with yellow at base and with series of brown lunules; the underside with the costal area irrorated with brown, the discoidal bar blackish, the postmedial line rather more distinct.

Ab. 1. *propinqua*. Smaller, darker, and suffused with blackish.—Taurus.

Ab. 2. Fore wing paler and suffused with olive-green instead of brown, the lines filled in with white.

Ab. 3. *viridata*. Fore wing bright green, the lines filled in with white.—Sicily.

Hab. France, Sand & Frey Colls.; Germany, Zeller Coll; Austria; Hungary, Leech Coll.; Spain, Bilbao; Italy; Sicily; Balkan States; Russia, St. Petersburg, 1 ♀, Crimea; Armenia; Asia Minor, Taurus; Palestine. *Exp.* 42–44 millim.

Larva. Kirby, Butt. & Moths Eur. p. 220; Hffm. Raup. p. 100, pl. 28. f. 7. Pale grey; dorsal line pale edged with blackish; ventral surface dark brown. Food-plants: Honeysuckle, Privet. 10–5.

Sect. III. Antennæ of male serrate and fasciculate.

3565. Polyphænis subsericata.

Polyphænis subsericata, Herr.-Schäff. Neue Schmett. p. 26, f. 124 (1856); Staud. Cat. Lep. pal. p. 184.

♂. Head and thorax white mixed with black and some olive-brown; pectus white; tarsi black ringed with white; abdomen brown ringed with white, the ventral surface white slightly irrorated with brown. Fore wing grey suffused with olive-brown and thickly irrorated with black, the basal half of medial area paler; subbasal line represented by grey striæ from costa and cell; antemedial line defined by grey on inner side, oblique from costa to submedian fold, then curved; orbicular small, round, with olive centre defined by

black; reniform grey-white, open above, its outer edge excised; an indistinct waved medial line, oblique from costa to below cell; postmedial line double filled in with grey, the outer line indistinct, slightly bent outwards below costa, oblique to vein 5, then inwardly oblique, some minute whitish points beyond it on costa; subterminal line grey defined by black on inner side, angled outwards at veins 7, 6, 4, 3, 2; a fine waved dark terminal line; cilia

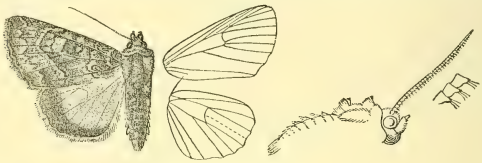


Fig. 173.—*Polyphænis subsericata*, ♂. ½.

fuscous and grey with a whitish line at base. Hind wing blood-red with a black terminal band, broad at apex, narrowing to a point at tornus, the termen with slight reddish marks except towards apex; cilia white with a series of fuscous points; the underside paler, the costal area white irrorated with brown, some white on termen.

Hab. Rhodes; Cyprus (*Miss Bate*), 1 ♂; Asia Minor, Pontus, Taurus. *Exp.* 48 millim.

Sect. IV. (*Triphænopsis*). Antennæ of male ciliated.

A. Palpi with the 3rd joint very long and porrect.

3566. Polyphænis pulcherrima.

Epilecta pulcherrima, Moore, P. Z. S. 1867, p. 54, pl. 6. f. 3; Hmpsn. Moths Ind. ii. p. 219.
Polyphænis largetaui, Oberth. Ét. Ent. vi. p. 19, pl. viii. f. 4 (1881).
Epilecta opulenta, Butl. P. Z. S. 1883, p. 160.

Head and thorax brown tinged with grey and mixed with olive-green; palpi brown irrorated with whitish, whitish at base; tegulæ and patagia with olive-green patches; pectus and legs grey mixed with brown; abdomen grey suffused with fuscous leaving slight pale segmental lines, the crests dark, the anal tuft reddish ochreous with dark spot above. Fore wing black-brown mixed with olive-green and some reddish; subbasal line black defined by olive-green on outer side, waved, from costa to submedian fold; antemedial line black defined by green on inner side, oblique, waved; orbicular green defined by black and with black centre, small, round; reniform an ill-defined green patch, its centre tinged with reddish ochreous and defined by black on inner side and below a waved blackish medial line, oblique from costa to below cell; postmedial line black defined by green lunules on outer side, bent outwards below costa, then waved, incurved at discal fold and below vein 4, some white points beyond it on costa; subterminal

line green defined on inner side by somewhat dentate black marks and with black marks beyond it below veins 7 and 4, excurved below vein 7, angled inwards at discal fold, dentate at middle and incurved below vein 2; a terminal series of slight dark lunules; cilia fuscous brown with slight green lines at base and near tips. Hind wing orange-yellow; the basal and inner areas brown with

Fig. 174.—*Polyphænis pulcherrima*, ♂. ¾.

oblique outer edge; a broad terminal black band, its inner edge angled inwards at discal fold, then strongly excurved, the termen narrowly and cilia yellow, fuscous between veins 4 and 2. Underside of fore wing fuscous brown, the costa yellowish conjoined to a large lunulate yellowish patch beyond the cell extending to below vein 3, the terminal area with some grey suffusion; hind wing yellow with the black terminal band as above.

Ab. 1. Fore wing without the ochreous patch on reniform.

Ab. 2. Fore wing with ochreous patches beyond the reniform and inner half of postmedial line.

Hab. W. China, Kouy-Tchéou; Punjab, Dalhousie (*Harford*), 2 ♂, 2 ♀, Dharmsála (*Hocking*), 5 ♂, 3 ♀ type *opulenta*, Umballa, 1 ♀; Sikhim (*Atkinson*, *Dudgeon*), 3 ♂, 1 ♀ type; ? Madras, Nilgiris (*Swinhoe*), 1 ♀. *Exp.* 44–58 millim.

B. Palpi with the 3rd joint short.
  a. Hind wing with the inner edge of the terminal black band strongly incurved at discal fold.
    a^1. Fore wing with the ground-colour olive-green ..... *oberthuri*.
    b^1. Fore wing brown with a slight orange tinge ..... *confecta*.
  b. Hind wing with the inner edge of the terminal black band not incurved at discal fold.
    a^1. Hind wing orange.
      a^2. Hind wing with the orange extending to inner margin above tornus ..... *sulpulchra*.
      b^2. Hind wing with the orange not extending to inner margin above tornus ..... *lucilla*.
    b^1. Hind wing pale yellow.
      a^2. Hind wing with the inner area brown.
        a^3. Fore wing without white annulus to orbicular.
          a^4. Fore wing with the medial area not suffused with black ..... *cinerescens*.
          b^4. Fore wing with the medial area suffused with black.
            a^5. Hind wing with dark discoidal striga, the postmedial line absent ..... *diminuta*.

b^5. Hind wing without discoidal striga, a slight postmedial line from vein 6 to inner margin. *inepta.*
b^3. Fore wing with white annulus to orbicular ..... *postflava.*
b^2. Hind wing with the inner area not brown.
a^4. Fore wing uniform dark brown ..... *indica.*
b^3. Fore wing with the terminal area grey ..... *ditata.*

3567. Polyphænis oberthuri.

Polyphænis pulcherrima, Oberth. Ét. Ent. x. p. 22, pl. 2. f. 11 (nec Moore).
Polyphænis oberthuri, Staud. Rom. Mém. vi. p. 454 (1892); id. Cat. Lep. pal. p. 184.

Head and thorax olive-green mixed with black; palpi black irrorated with white, whitish at base; tegulæ with green patches; pectus and legs grey mixed with brown, the tarsi black ringed with white; abdomen black-brown with slight orange segmental bands, the ventral surface grey irrorated with brown. Fore wing olive-green irrorated with black; subbasal line double, black filled in with pale green, minutely waved, from costa to submedian fold; antemedial line double filled in with green, waved, angled inwards on vein 1 and outwards above inner margin; claviform elongate, very indistinctly defined by black scales; orbicular defined by black and with brownish centre; reniform defined by black on inner side and below, with some reddish ochreous in centre and blackish mark below it; a black medial line oblique from costa to vein 2, then waved; postmedial line double, the two lines widely separated at costa, bent outwards below costa, then minutely waved, oblique to vein 4, then incurved, filled in with whitish at inner margin, some white points beyond it on costa; subterminal line green defined on inner side by black suffusion and by dentate black marks at middle, some black beyond it at costa and discal fold, angled outwards at vein 7 and inwards at discal fold; a terminal series of slight black lunules. Hind wing orange, the inner area blackish brown with oblique sinuous upper edge and orange fascia below vein 1; a broad black terminal band with sinuous inner edge incurved at discal fold, then strongly excurved; the termen narrowly and cilia yellow with blackish patches between veins 4, 3 and towards tornus, with slight yellow points on them. Underside of fore wing pale yellowish with obliquely curved blackish band from below middle of costa where it is broad, narrowing to the diffused subterminal band below vein 2, the subterminal band expanding into a large patch towards costa, the termen greyish; hind wing orange, the costal area irrorated with red-brown, the terminal area as above.

Ab. 1. Fore wing with prominent white patch on and beyond reniform and sometimes a white point in orbicular and some whitish beyond inner half of postmedial line, some black suffusion on inner half of medial area.

Hab. E. Siberia, Ussuri; Corea, Gensan (*Ito*), 2 ♀; W. China, Chang-yang (*Pratt*), 2 ♂, Omei-shan, 1 ♀, Washan (*Pratt*), 1 ♂, Chia-kou-ho (*Pratt*), 2 ♂, Ta-chien-lu (*Pratt*), 1 ♂, Hou-kou, 1 ♂.
Exp. 46–56 millim.

3568. Polyphænis confecta.

Triphæna confecta, Wlk. xv. 1705 (1858); Hmpsn. Moths Ind. ii. p. 219.
Agrotis hyblæa, Feld. Reis. Nov. pl. 108. f. 43 (1874).
Eliochræa curtipalpis, Butl. Ill. Het. B. M. vii. p. 74, pl. 131. ff. 7, 8 (1889).

Head and thorax olive-brown mixed with fuscous and grey; palpi whitish at base, black and white at tips; patagia with some black scales on upper edge; pectus and legs white tinged with brown, the fore tarsi black ringed with white; abdomen black with yellow rings, some brown hairs at base, the crests black, the ventral surface yellowish white irrorated with black towards extremity. Fore wing olive-brown slightly irrorated with black; subbasal line represented by black striæ from costa and cell; antemedial line indistinctly double, oblique, minutely waved; claviform indicated by some black scales on its edges; orbicular slightly defined by black and with a dark point in centre, round; reniform slightly defined by black on inner side and below with a few black scales on outer edge and black mark on lower edge of centre; medial line represented by an oblique black bar from costa to reniform and a slight oblique line from lower angle of cell to inner margin; postmedial line double, bent outwards below costa, then waved, oblique to vein 4, then incurved, some whitish points beyond it on costa; subterminal line

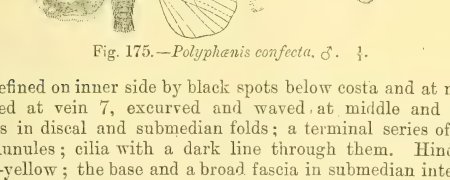


Fig. 175.—*Polyphænis confecta*, ♂. ½.

grey, defined on inner side by black spots below costa and at middle, excurved at vein 7, excurved and waved at middle and angled inwards in discal and submedian folds; a terminal series of small black lunules; cilia with a dark line through them. Hind wing orange-yellow; the base and a broad fascia in submedian interspace to beyond middle black-brown, the latter almost conjoined to the black terminal band which is very broad at apex, its inner edge incurved at discal fold, then strongly excurved and angled inwards in submedian fold; the termen narrowly and the cilia yellow interrupted by a black patch between veins 4 and 2. Underside of fore wing black-brown, the base of costa whitish, the basal half of cell and inner area pale yellow, a pale yellow patch beyond the cell with rather dentate outer edge extending to below vein 3; hind wing with the costal area irrorated with black, a diffused black patch below end of cell, the terminal band as above.

Ab. 1. Fore wing with more or less white irroration before and beyond the postmedial line which is filled in with white.

Ab. 2. *curtipalpis*. Fore wing with large white patch on reniform, the postmedial line often filled in with white.

Hab. Punjab (*Horne*), 1 ♂, Kulu, Sultanpur (*G. Young*), 2 ♀, Simla (*Harford*), 2 ♂, 2 ♀, Dalhousie (*Harford*), 3 ♂, Dharmsála (*Hocking*), 2 ♀, type *curtipalpis*, Manpuri, 1 ♂. *Exp.* 40–50 millim.

*3569. Polyphænis subpulchra.

Hadena subpulchra, Alph. Rom. Mém. ix. p. 173, pl. 12. f. 11 (1897).

♀. Head and thorax brown suffused with grey; abdomen red-brown with pale segmental lines. Fore wing reddish brown, the basal half suffused with grey; subterminal line represented by double dark striæ from costa filled in with whitish; antemedial line double, waved, oblique to median nervure, then erect; orbicular slightly defined by blackish, round; reniform white defined by black, rather constricted at middle; postmedial line defined by greyish on outer side, bent outwards below costa, oblique to vein 5, then incurved and dentate, some white points beyond it on costa; subterminal line indistinct, pale, excurved below vein 7 and at middle; a terminal series of small black lunules. Hind wing orange, the base suffused with black-brown, extending as streaks along the veins to beyond lower angle of cell and on vein 1; a broad terminal black band leaving orange lunules on termen except at tornus, its inner edge slightly angled inwards in submedian fold; cilia orange. Underside of fore wing blackish, the basal area, the reniform, a postmedial patch on costa, and a striga on termen above tornus orange.

Hab. Corea. *Exp.* 54 millim. This species is unknown to me.

3570. Polyphænis lucilla.

Triphænopsis lucilla, Butl. A. M. N. H. (5) i. p. 163 (1878), & Ill. Het. B. M. ii. p. 26, pl. 33. f. 1.

Head and thorax red-brown mixed with some grey and fuscous, the metathorax with yellowish patch; palpi grey-white and black; pectus and legs whitish mixed with brown, the tarsi blackish ringed with white; abdomen red-brown with some fuscous suffusion, the crests blackish. Fore wing greyish suffused with red-brown and with slight dark irroration, the inner area red-brown except at base, the terminal area broadly fuscous with pale patch at apex; subbasal line double, slightly waved, from costa to submedian fold; antemedial line double, curved, waved; claviform slightly defined by black; orbicular grey defined by black, rather oblique elliptical; reniform defined by black and with slight greyish annulus on inner side and below and with four pale points on outer edge; a dark medial line oblique from costa to vein 2, then waved; postmedial line double filled in with greyish, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line yellowish defined on inner side by slight dentate blackish marks, excurved at vein 7, excurved and waved at middle and angled inwards at discal and submedian folds;

a terminal series of slight blackish lunules; cilia brown with a fine yellow line at base. Hind wing fuscous brown with broad oblique yellow bands beyond the cell from costa to vein 2, its inner edge angled inwards below the cell; some yellow on termen in submedian interspace; cilia yellow with fuscous spots between veins 4 and 2. Underside of fore wing fuscous, the costal area to beyond middle and terminal area grey, a pale yellow patch beyond the cell; hind wing yellow, the costal area irrorated with brown, a black discoidal lunule, a broad black subterminal band with sinuous inner edge leaving some whitish on termen.

Ab. 1. Fore wing with the points on outer edge of reniform white.

Ab. 2. The type. Fore wing with large white patch on outer part of reniform, the postmedial area suffused with whitish except on costal area.

Hab. Japan, Yokohama (*Jonas*, *Pryer*), 1 ♂, 5 ♀ type. *Exp.* 40–50 millim.

3571. Polyphænis cinerescens. (Plate CXXIII. fig. 12.)

Triphænopsis cinerescens, Butl. Cist. Ent. iii. p. 133 (1885).

♂. Head and thorax pale rufous mixed with grey; palpi white and brown, the 2nd joint blackish at sides; frons with lateral black bars; antennæ blackish; pectus and legs white tinged with brown, the tarsi black ringed with white; abdomen pale red-brown, the ventral surface whitish. Fore wing pale red-brown tinged with grey and with slight dark irroration; subbasal line double, the outer line indistinct except at costa, slightly waved, from costa to submedian fold, in which there is a black point beyond it; antemedial line double, the inner line indistinct except at costa, oblique, waved, angled inwards on vein 1 and outwards above inner margin; claviform slightly defined by brown; orbicular defined by fuscous, rather oblique elliptical; reniform defined by fuscous on inner side, a white patch in centre and on outer part and extending to costa, its outer edge waved and its centre defined by fuscous; a brown medial line oblique from costa to below cell, then waved; postmedial line double towards costa, bent outwards below costa, then dentate and produced to black points on the veins, oblique to vein 5, then incurved, some white points beyond it on costa; subterminal line very indistinct, greyish, slightly defined by brown on inner side, excurved at vein 7, excurved and waved at middle; a terminal series of small blackish lunules. Hind wing fuscous brown with a reddish tinge; a broad oblique pale yellow band beyond the cell from costa to vein 2, its inner edge angled inwards below the cell; some pale yellow on termen at submedian interspace; cilia yellow intersected with brown at apex and middle. Underside of fore wing whitish suffused with brown except on costal and terminal areas and a patch beyond the cell; hind wing whitish, the costal area irrorated with brown, a black discoidal spot, curved punctiform.

postmedial line, and broad subterminal band not reaching inner margin.

♀. Fore wing with the postmedial area except towards costa and the terminal area more or less strongly suffused with grey-white.

Hab. Japan, Yezo (*Pryer*), 1 ♂, 1 ♀; Hakodaté (*Leech*), 2 ♂, Fujisan (*Pryer*), 1 ♀ type. *Exp.* 36–46 millim.

3572. Polyphænis diminuta.

Triphænopsis diminuta, Butl. Ill. Het. B. M. vii. p. 55, pl. 127. ff. 8, 9 (1889); Hmpsn. Moths Ind. ii. p. 219.

Head and thorax whitish mixed with brown and fuscous; palpi fuscous and grey; tegulæ with lateral black spots; pectus white; tibiæ brownish; tarsi rufous ringed with white; abdomen brownish grey dorsally suffused with fuscous, leaving pale segmental lines, the anal tuft pale rufous. Fore wing fuscous brown with a greyish tinge, the basal half suffused and irrorated with black; subbasal line double, from costa to submedian fold, with a black mark beyond it above vein 1; antemedial line double, oblique, angled outwards below costa and above inner margin; claviform defined by black except above; orbicular defined by black except above, oblique elliptical; reniform slightly defined by black on inner side and below, extending to well below cell; a diffused black medial shade, oblique from costa to below cell; postmedial line indistinctly double, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line grey, defined on inner side by slight dentate black marks at middle, excurved below vein 7, excurved and waved at middle; a terminal series of small triangular black spots; cilia with a fine grey line at base. Hind wing fuscous black with broad oblique pale yellow band beyond the cell from costa to vein 2, its inner edge irregular; some pale yellow on termen in submedian interspace; cilia yellow with two fuscous marks at middle. Underside of fore wing fuscous, the costal area yellowish white to beyond middle, a white patch beyond the cell, the terminal area whitish; hind wing with the costal area and disk pale yellow, the former slightly irrorated with fuscous, the cell and inner area white, a black discoidal lunule and broad black subterminal band leaving some white on termen.

Ab. 1. Fore wing with four white points on outer edge of reniform.

Ab. 2. Fore wing with large white patch on outer part of reniform.

Hab. Punjab, Dharmsála (*Hocking*), 5 ♂, 3 ♀ type. *Exp.* 34–38 millim.

3573. Polyphænis inepta.

Triphænopsis inepta, Butl. Ill. Het. B. M. vii. p. 55, pl. 127. ff. 6, 7 (1889); Hmpsn. Moths Ind. ii. p. 218.

♂. Head and thorax whitish suffused with red-brown and mixed with fuscous; palpi blackish; tegulæ with black medial line; pectus whitish; tarsi black ringed with white; abdomen whitish, dorsally suffused with fuscous, the crests blackish, the anal tuft pale rufous. Fore wing with the basal half red-brown suffused with black, the terminal half ochreous grey tinged with rufous, the terminal area fuscous grey except at apex; a wedge-shaped black mark above base of vein 1; subbasal line double, waved, from costa to submedian fold; antemedial line slightly defined by rufous on inner side, double at costa, oblique, waved, angled outwards below costa; the medial area with diffused black streak above vein 1; claviform defined by black; orbicular with slight pale annulus defined by black, oblique elliptical; reniform whitish tinged with rufous, defined by black on inner edge and its centre by rufous, its outer edge waved; an indistinct medial line oblique from costa to below cell, then waved; postmedial line defined by grey on outer side, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line pale slightly defined by brown on inner side, excurved at vein 7 and middle; a terminal series of small black lunules; cilia with a fine ochreous line at base. Hind wing fuscous with broad oblique yellowish-white band beyond the cell from costa to vein 2, its inner edge slightly angled inwards below the cell; a slight sinuous postmedial line defined by whitish on outer side; some yellow on termen at submedian interspace; cilia yellow with slight fuscous striæ at middle. Underside of fore wing greyish fuscous, the basal area whitish, a whitish patch beyond the cell, postmedial line whitish, terminal area whitish except at apex; hind wing yellowish white, the costal area yellow irrorated with brown, a fuscous discoidal lunule, waved postmedial line, and broad subterminal band not reaching tornus.

♀. Fore wing with the reniform entirely filled in with white.

Hab. Punjab, Dharmsála (*Hocking*), 2 ♂, 1 ♀ type. *Exp.* 46 millim.

3574. Polyphænis postflava. (Plate CXXIII. fig. 13.)

Agrotis postflava, Leech, Trans. Ent. Soc. 1900, p. 31.

Head and thorax white mixed with some red-brown; palpi mostly brown at sides; tegulæ with lateral black patches; patagia with some black scales on upper edge; tarsi brown with whitish rings; abdomen yellowish suffused with brown, the crests blackish. Fore wing yellowish white almost wholly suffused with brown and irrorated with black, the medial area rather darker; subbasal line double, black, slightly waved, from costa to submedian fold, a blackish patch beyond it above vein 1; antemedial line double, filled in with greyish, the inner line indistinct, oblique, angled

outwards below costa and above inner margin, a dark patch before it on inner half; claviform large, defined by black, extending to cell; orbicular and reniform white defined by black, the former with brown centre, oblique elliptical, the latter with some brown in lower part, the cell before and between them suffused with black; an indistinct sinuous dark line from lower angle of cell to inner margin; postmedial line indistinctly double filled in with greyish, bent outwards below costa, then dentate, excurved to vein 4, then incurved, some whitish points beyond it on costa; subterminal line indistinct, pale, defined on inner side by dentate blackish marks at middle, waved, excurved below vein 7 and at middle; a terminal series of small blackish lunules. Hind wing fuscous brown with broad oblique pale yellow band from costa beyond middle to vein 3; some yellow on termen at submedian fold; cilia pale yellow. Underside of fore wing brown with yellowish-white patch beyond the cell; hind wing yellowish white, the costal area irrorated with brown, a blackish discoidal lunule and broad terminal band.

Hab. Japan, Yokohama (*Manley*), 1 ♂ type; Corea, Gensan (*Leech*), 1 ♀. *Exp.* ♂ 36, ♀ 40 millim.

3575. **Polyphænis indica.** (Plate CXXIII. fig. 14.)

Thalpophila indica, Moore, P. Z. S. 1881, p. 344; Hmpsn. Moths Ind. ii. p. 219.

♂. Head and thorax dark red-brown; pectus and legs yellowish mixed with brown, the tarsi ringed with yellowish; abdomen pale red-brown with the crests darker. Fore wing dark brown with a greyish gloss and slightly irrorated with black; subbasal line double, minutely waved, from costa to submedian fold; antemedial line double, oblique, waved; claviform defined by black; orbicular and reniform defined by black and with some fuscous in centres, the former oblique elliptical; an indistinct waved medial line, oblique from costa to median nervure; postmedial line double, the outer line indistinct, slightly bent outwards below costa, then dentate, oblique to vein 5, then incurved, some pale points beyond it on costa; subterminal line pale rufous defined on inner side by slight diffused blackish marks, excurved below vein 7 and at middle; a terminal series of small triangular black spots; cilia with a fine pale line at base. Hind wing pale yellow with broad fuscous brown terminal band; cilia yellow with some brown marks at tips at middle; the underside with brown discoidal lunule, diffused subterminal band, and fine waved terminal line.

Hab. Punjab, Masuri, 1 ♂ type. *Exp.* 46 millim.

*3576. **Polyphænis ditata.** (Plate CXXIII. fig. 15.)

Luperina ditata, Lucas, P. Linn. Soc. N.S.W. (2) vii. p. 254 (1892).

♀. Head and thorax grey mixed with brown; abdomen grey dorsally tinged with rufous. Fore wing grey suffused with brown

except on terminal area; an indistinct double waved subbasal line from costa to submedian fold; a double waved antemedial line; orbicular and reniform obscurely outlined in black, the former rather 8-shaped, oblique, and extending below the cell; an indistinct oblique waved line from lower angle of cell to inner margin; the postmedial line double, the inner line strong, black, minutely waved, oblique from costa to vein 6, excurved to vein 3, then inwardly oblique; a waved whitish subterminal line with diffused black patch on its inner edge at costa, black spot between it and postmedial line at vein 5 and smaller spots at veins 2 and 1; some dark points on termen; cilia dark brown. Hind wing pale yellow, the terminal half fuscous brown.

Hab. Queensland, Brisbane, in Coll. Turner. *Exp.* 38 millim.

Genus **THALPOPHILA.**

	Type.
Thalpophila, Hübn. Verz. p. 208 (1827)	*matura.*
Cerigo, Steph. Ill. Brit. Ent. Haust. ii. p. 106 (1829)	*matura.*

Proboscis fully developed; palpi upturned, the 2nd joint broadly fringed with hair in front and reaching about to middle of frons, the 3rd short; frons smooth; eyes large, round; antennæ of male serrate and fasciculate; thorax clothed with hair and scales mixed, the prothorax with spreading crest, the metathorax with divided crest; tibiæ broadly fringed with hair; abdomen with lateral tufts of hair and some rough hair at base, but without crests. Fore wing with the apex rounded, the termen evenly curved, crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Hind wing with broad terminal brown band	*matura.*
B. Hind wing with fine terminal brown line	*vitalba.*

3577. Thalpophila matura.

Phalæna matura, Hüfn. Berl. Mag. iii. p. 414 (1767); Staud. Cat. Lep. pal. p. 169.
Noctua texta, Esp. Schmett. iv. pl. 108. ff. 5, 6 (1787).
Noctua cytherea, Fabr. Ent. Syst. iii. 2. p. 57 (1794); Godart, Lép. Fr. v. p. 147, pl. 57. f. 4.
Noctua connexa, Hübn. Eur. Schmett., Noct. ff. 109, 547 (1802).

Head and thorax red-brown mixed with greyish and fuscous; palpi yellowish white at base; tarsi ringed with white; abdomen yellowish white tinged with brown, the anal tuft mixed with black; dark brown lateral stripes. Fore wing red-brown suffused with greyish; the base of inner margin grey; subbasal line indistinctly double, waved, from costa to submedian fold, below which there is a blackish mark beyond it and another above inner margin before the antemedial line which is double filled in with whitish, the inner line indistinct, waved, angled outwards above inner margin; claviform elongate, defined by black, acute at extremity; orbicular and reniform with pale annuli defined by black, the former round; an indistinct diffused brown medial line, oblique from costa to lower

angle of cell, then waved; postmedial line double filled in with white, bent outwards below costa, then waved, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line whitish, defined on inner side at middle by wedge-shaped black streaks, angled outwards at vein 7, excurved and waved at middle

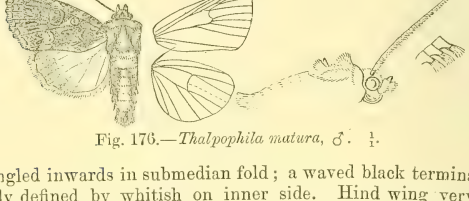


Fig. 176.—*Thalpophila matura*, ♂. ½.

and angled inwards in submedian fold; a waved black terminal line slightly defined by whitish on inner side. Hind wing very pale yellow with brown terminal band, broad at apex, narrowing to a point at tornus; cilia white, pale brown at base from apex to vein 2; the underside with the costal area suffused with red-brown, a slight discoidal point and traces of a postmedial line on costal area.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller & Frey Colls.; Austria; Hungary; Switzerland; Italy; Dalmatia, Leech Coll.; Scandinavia; S. Russia; Armenia; Asia Minor, Pontus.
Exp. 38–48 millim.

Larva. Meyr. Brit. Lep. p. 124; Barrett, Lep. Brit. iv. p. 342, pl. 174. f. 3.
Pale brownish ochreous or brownish; a dorsal series of paired dark fuscous longitudinal marks, subdorsal and lateral lines edged with brown; subspiracular line paler or whitish ochreous edged with brown above; head pale ochreous or brownish. Food-plants: Grasses 9–4.

3578. Thalpophila vitalba.

Noctua vitalba, Frr. Neue Beitr. pl. 124. ff. 3, 4 (1834); Staud. Cat. Lep. pal. p. 169.
Hadena vittalba, Treit. Schmett. Eur. Suppl. x. 2. p. 40 (1835); Boisd. Icones, pl. 73. ff. 4–6; Herr.-Schäff. Eur. Schmett., Noct. ff. 34–6.
Cerigo amathusia, Rmbr. Ann. Soc. Ent. Fr. 1871, p. 319; Mab. Ann. Soc. Ent. Fr. 1872, pl. 15. f. 8.

♂. Head and thorax pale red-brown mixed with some white and black; 2nd joint of palpi fuscous; antennæ with the shaft white at base; tegulæ with some blackish near tips which are white; patagia with black streaks near edges; fore and mid tibiæ and tarsi suffused with fuscous in front; abdomen greyish white with slight ochreous rings. Fore wing greyish suffused with pale red-brown, the veins streaked with white; a black streak below base of cell; antemedial line obsolete on costal half, angled outwards in submedian interspace and forming a wedge-shaped blackish mark above inner margin; claviform very large, defined by black and extending almost to postmedial line; orbicular and reniform with

fuscous-brown centres and pale annuli defined by black, the former elongate and confluent with the latter, some blackish before it in cell; postmedial line black defined by whitish on outer side, excurved from costa to vein 5, then oblique, bent outwards to inner margin and with a black streak before it below vein 1; subterminal line represented by a series of whitish points in the interspaces with wedge-shaped black streaks before them and slight black streaks from them to termen; a terminal series of slight black lunules; cilia white tinged with fuscous at tips. Hind wing white, the terminal area faintly tinged with brown; a fine brown terminal line; the underside with the costal area slightly tinged with brown.

Hab. S.W. France; Spain, Catalonia, Bilbao; Sicily, 1 ♂; Algeria. *Exp.* 42 millim.

Genus **NEOPHÆNIS**, nov.

Type, *N. respondens*.

Proboscis fully developed: palpi upturned, the 2nd joint reaching about to middle of frons and smoothly scaled, the scales at extremity produced to a slight point in front, the 3rd joint porrect, typically short; frons smooth; eyes large, round; antennæ of male almost simple; thorax clothed almost entirely with scales and without crests; build slender; fore tibiæ fringed with hair, the mid and hind tibiæ smoothly scaled; abdomen with dorsal crests on basal segments. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Hind wing orange ..... *respondens*.
B. Hind wing deep blood-red.
  a. Hind wing not tinged with grey.
    a^1. Fore wing bright emerald-green not irrorated with black ..... *frauenfeldi*.
    b^1. Fore wing deep emerald-green strongly irrorated with black ..... *meterythra*.
  b. Hind wing tinged with grey ..... *psittacea*.

3579. Neophænis respondens.

Polyphlænis respondens, Wlk. xv. 1720 (1858); Druce, Biol. Cent.-Am., Het. i. p. 293, pl. 27. f. 24.
Polyphlænis ochraceata, Wlk. xxxiii. 724 (1865).
Polyphænis aurea, Schaus, J. N.Y. Ent. Soc. vi. p. 110 (1898).

Head and thorax bright emerald-green mixed with blackish and some white; palpi white, the 2nd joint black above and at extremity; frons with lateral black points; pectus and legs white, the fore tibiæ and tarsi blackish ringed with white; abdomen yellowish white dorsally suffused with brown, the crests green tipped with black. Fore wing bright emerald-green irrorated with white; subbasal line represented by double black striæ from costa, a diffused mark in cell and oblique striga above vein 1; antemedial line double, waved, oblique from costa to above vein 1; claviform

defined by black, short and broad with a diffused black streak from its lower edge to medial line; orbicular and reniform very large, defined by black, the former with blackish centre, round, the latter with its centre defined by blackish, elliptical and extending to well below cell, some black suffusion between them above median nervure and beyond lower angle of cell; medial line represented by a black striga from costa and waved line from cell to inner margin; postmedial line double at costa and below vein 5, bent outwards below costa, oblique to discal fold, then waved, incurved below vein 4, some black points with white streaks between them beyond it on costa and a black streak from it to termen in discal fold; a

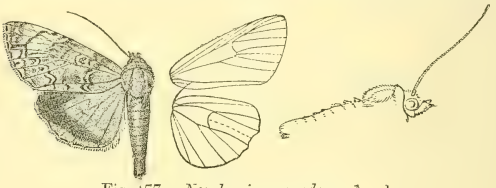


Fig. 177.—*Neophænis respondens*, ♂. ½.

waved maculate blackish subterminal line, angled inwards at veins 5 and 2 and with a diffused dentate line beyond it from costa to vein 5; a terminal series of black lunules; cilia blackish with a fine white line at base. Hind wing orange tinged with red; a large black-brown apical patch with diffused irregular band from it to near tornus, towards which it narrows, leaving some orange before the waved black terminal line which ends at submedian fold; cilia yellowish white with slight fuscous marks at tips towards apex and at middle. Underside of fore wing suffused with brown, except costal area to beyond middle and inner area which are yellowish white; hind wing yellow, the apical patch and subterminal band obsolescent.

Ab. 1. Fore wing with the black markings obsolescent except on costal area; hind wing with the subterminal band not extending below vein 3.—Trinidad.

Ab. 2. *aurea*. Fore wing with dark patch on inner medial area; hind wing with apical patch only.—Venezuela.

Hab. Mexico, Jalapa (*Trujillo*), 4 ♂, Mexico City (*Hoege*), 1 ♂, Godman-Salvin Coll.; Honduras (*Dyson*), 1 ♀; Trinidad (*Urich*), 1 ♂; Venezuela, Aroa, 2 ♂; Brazil, 1 ♂ type. *Exp.* 42–54 millim.

3580. Neophænis frauenfeldi.

Polyphænis frauenfeldi, Feld. Reis. Nov. pl. 109. f. 14 (1874).

♀. Head and thorax emerald-green mixed with fuscous brown and grey, the vertex of thorax entirely fuscous brown and grey; palpi white mixed with black; frons with lateral black bars; pectus

and legs whitish tinged with brown, the fore tibiæ and tarsi banded black and white; abdomen grey-brown with a reddish tinge, the base dorsally green, the crest on 3rd segment tipped with silvery scales. Fore wing bright emerald-green with patches of white irroration especially on medial area, the median nervure and veins arising from it to postmedial line and vein 1 streaked with white; subbasal line indistinct, double, black, waved, from costa to median nervure; antemedial line double, waved, bent outwards and obsolescent below median nervure; claviform with small black spots on its upper and lower edges, otherwise undefined; orbicular with white annulus very incompletely defined by black and with two black points in centre, elliptical; reniform with its centre and outer edge incompletely defined by black and with some white points on outer edge, extending to well below cell, a black patch in cell between the stigmata; postmedial line indistinctly double, bent outwards below costa, then obliquely waved to vein 4, then incurved, some white points with black streaks between them beyond it on costa; a black-brown apical patch with an oblique green subterminal line on it from costa to vein 6, with black band from it angled inwards to postmedial line at vein 6 and oblique to termen below vein 2; small black-brown spots before termen on veins 4, 3; a terminal series of small black lunules; cilia black-brown, chequered with green towards tornus. Hind wing deep cupreous red, the basal half suffused with brown; a broad diffused dark subterminal band with some whitish beyond it on middle of termen; a fine waved black terminal line from apex to vein 2; cilia ochreous and brown. Underside of fore wing dark reddish brown with some yellowish on costal area to beyond middle and on inner area; hind wing reddish ochreous with red discoidal lunule and bar above it from costa, a diffused curved postmedial line and broad terminal band. Palpi with the 3rd joint long.

Hab. Br. Guiana, Omai (*Schaus*), 1 ♀; Brazil, Rio Janeiro. *Exp.* 52 millim.

3581. **Neophænis meterythra**, n. sp. (Plate CXXIII. fig. 16.)

♂. Head and thorax light green mixed with red-brown and black; frons with slight lateral black bars; pectus and legs red-brown, the fore tibiæ fringed with green; abdomen dark red-brown, the crests with some green and black, the ventral surface paler. Fore wing deep emerald-green largely suffused and irrorated with dark red-brown; subbasal line represented by oblique blackish striæ from and below costa and points on median nervure and above vein 1; antemedial line very indistinct, double, incurved in cell and excurved below it; claviform slightly defined by black at extremity; orbicular with faint pale annulus defined by black at sides, round; reniform with dark red-brown centre defined by black, extending to below cell and angled inwards below median nervure, a black patch in cell between the stigmata; an indistinct diffused medial black line; postmedial line black defined by green on inner

side, slightly bent outwards below vein 7, oblique to vein 5, then slightly dentate, inwardly oblique to below vein 3 and erect to inner margin; subterminal line green and obliquely curved from costa to below vein 6, a wedge-shaped green patch on middle of termen and a patch with a brown mark on it towards tornus; a terminal waved black line and a small spot below vein 5; cilia fuscous brown with a slight green line at base. Hind wing deep cupreous red with a dark terminal band wide at apex, narrowing to tornus, leaving some irregular red marks on termen between veins 6 and 2; cilia red-brown with a slight pale line at base. Underside of fore wing red suffused with fuscous except on inner area, some whitish marks on termen and a larger patch below vein 5; hind wing red with darker suffusion on terminal half of costal area and terminal area, with some pale marks on middle of termen.

♀. Fore wing with the basal and costal areas and the inner half of postmedial area more or less irrorated with brownish-white scales.

Hab. St. Lucia (*Cowie*), 2 ♂, 1 ♀ type; Guadaloupe, 1 ♀. *Exp.* 44–46 millim.

3582. Neophænis psittacea. (Plate CXXIII. fig. 17.)

Polyphænis psittacea, Schaus, J. N.Y. Ent. Soc. vi. p. 110 (1898); Druce, Biol. Centr.-Am., Het. ii. p. 567.

♀. Head and thorax bright emerald-green mixed with white and some black; palpi white irrorated with black and with black streak on 2nd joint; frons white with two black lateral bars; tegulæ with black medial line; patagia edged with black at base; pectus and legs white tinged with brown, the fore tibiæ and tarsi banded black and white and the tibia fringed with green; abdomen pale reddish brown, the base green with the crests black mixed with silvery scales, the ventral surface white. Fore wing bright emerald-green slightly irrorated with black, the costal edge white; subbasal line black, double at costa, with black streak before it on subcostal nervure, from costa to submedian fold, a black spot beyond it above vein 1; antemedial line double, incurved in cell, then excurved; claviform defined by diffused black at extremity; orbicular defined by black at sides only and with some white on outer edge; reniform large, incompletely defined by black and its centre defined by diffused black, extending to well below cell, with black streak from it to orbicular above median nervure and white striga at its lower extremity with black patch beyond it; a minutely waved line from lower angle of cell to inner margin; postmedial line double, bent outwards and interrupted below costa, then minutely waved, excurved to vein 4, then incurved, some black points with white streaks between them beyond it on costa; an irregular diffused subterminal black line, angled inwards to postmedial line at discal fold and incurved below vein 2, with minute white streaks beyond it on the veins; some black suffusion at apex and a spot before termen above vein 5; a waved black terminal line and a spot below

vein 4; cilia fuscous with fine green line at base and green patches at middle and tornus. Hind wing deep red suffused with greyish, the terminal area with fuscous; traces of a discoidal bar and diffused postmedial line; a waved dark terminal line from apex to vein 2 with some whitish before it and a small white spot on vein 1 above tornus; cilia white tinged with red from apex to vein 2. Underside of fore wing red, the inner area whitish, some slight white marks on costa towards apex and on termen; hind wing whitish tinged with red, the terminal area red, a red discoidal bar with patch above it on costa and diffused minutely waved postmedial line.

Hab. Mexico, Jalapa (*Schaus*), 1 ♀; Panama, La Chorrera (*Dolby-Tyler*), 1 ♀; Br. Guiana, Potaro R. (*Roberts*), 1 ♀. *Exp.* 33–42 millim.

Genus ECCLETA.

Type.

Eccleta, Turner, P. Linn. Soc. N.S.W. xxvii. p. 86 (1902); id. Tr. R. Soc. S. Austr. xxx. p. 120 (1906) ..... *xuthophanes.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to vertex of head and moderately scaled, the 3rd rather long; frons smooth with tuft of hair, a projecting corneous plate below it; eyes large, round; antennæ of male bipectinate with long branches, the apex ciliated; thorax clothed chiefly with scales and with dorsal ridge-like crest; build rather slender; mid and hind tibiæ with tufts of hair at middle and extremity; abdomen without crests, long. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3583. Eccleta xuthophanes.

Eccleta xuthophanes, Turner, P. Linn. Soc. N.S.W. xxvii. p. 87 (1902).

♂. Head and thorax rufous mixed with blackish; palpi blackish; tibiæ and tarsi blackish banded with grey; abdomen pale orange-red at base, brownish at extremity and on ventral surface. Fore wing grey, largely irrorated and suffused with fuscous brown, the discal and submedian folds tinged with reddish; subbasal line

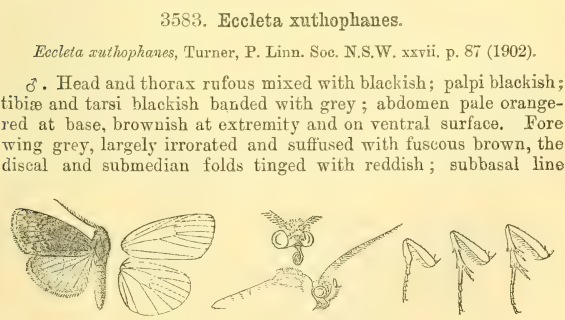


Fig. 178.—*Eccleta xuthophanes*, ♂. ½.

represented by double dark striæ from costa; antemedial line indistinct, double, slightly waved and oblique; orbicular and reniform minute, defined by black, the former round with grey point in

centre, the latter with grey points in upper and lower parts; medial line indistinct, dark, diffused, oblique from costa to median nervure; postmedial line double, slightly bent outwards below costa, then minutely waved, excurved to vein 4, then oblique, some pale points beyond it on costa; postmedial area with some reddish in the interspaces between veins 6 and 1; subterminal line whitish defined by blackish marks on inner side, minutely waved and angled inwards in discal and submedian folds; a terminal series of black striæ. Hind wing orange-red with brown terminal band rather diffused on inner side; cilia brown at base, whitish at tips; the underside ochreous, the costal area suffused with brown, a small discoidal spot, indistinct curved postmedial line, the terminal band broken up into diffused patches.

Hab. Queensland (*Turner*), 1 ♂, Townsville, Stradbroke I. *Exp.* 30 millim.

Genus **BRYOLEUCA**, nov.

Type, *B. trilinea*.

Proboscis aborted, minute; palpi upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair, the 3rd joint moderate; frons smooth; eyes large, round; antennæ of male minutely serrate with fascicles of cilia; thorax clothed almost entirely with scales and without crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex somewhat produced, the termen slightly excised below apex, then curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 shortly stalked; 5 obsolescent from just below middle of discocellulars; 6, 7 stalked; 8 anatomosing with the cell near base only.

3584. Bryoleuca trilinea.

Miana trilinea, Beth.-Baker, Trans. Ent. Soc. 1894, p. 41; Staud. Cat. Lep. pal. p. 165.

Head, thorax, and abdomen white slightly tinged with ochreous; antennæ brownish; fore tarsi slightly banded with brownish above. Fore wing creamy white faintly irrorated with pale brown except on antemedial area and from end of cell to postmedial line; antemedial line represented by slight black striæ from costa and cell; orbicular hardly traceable, finely defined by fuscous and constricted

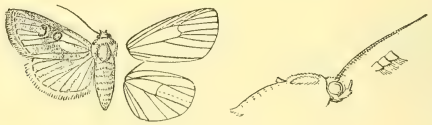


Fig. 179.—*Bryoleuca trilinea*, ♂. ¾.

at middle; reniform a faint dark lunule; postmedial line indistinct, formed by black scales and interrupted in places, erect from costa to vein 4, then incurved; a fine dark terminal line. Hind wing

white, the terminal area faintly tinged with brown; the underside white with the costal and inner areas slightly tinged with ochreous.

Hab. Egypt, Alexandria, 1 ♂, Cairo (*Graves*), 1 ♀. *Exp.* 24 millim. Type † ♂ in Coll. Bethune-Baker.

Genus **MEROLEUCA**, nov.

Type, *M. microglossa*.

Proboscis aborted, minute; palpi porrect, extending about the length of head and moderately fringed with scales below, the 3rd joint short; frons with large rounded prominence with corneous plate below it; eyes large, round; antennæ of male ciliated; thorax clothed almost entirely with scales and without crests; build slender; tibiæ smoothly scaled; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3585. Meroleuca microglossa.

Pœcilia microglossa, Rmbr. Lép. S. And. pl. 7. ff. 1, 2 & pl. 22. ff. 1, 2 (1858); Staud. Cat. Lep. pal. p. 165.

♂. Head and thorax whitish tinged with pale rufous; palpi with black-brown patches on 2nd and 3rd joints; tarsi blackish ringed with white; abdomen brownish white. Fore wing whitish suffused with pale red-brown, the ante- and postmedial areas except towards costa and tornus whiter; subbasal line black, waved, from costa to vein 1; antemedial line black, minutely waved, oblique; claviform, orbicular, and reniform blackish with some grey scales and defined by black, the first moderate, the second irregularly rounded, the last somewhat constricted at middle and angled inwards on median nervure; an oblique fuscous shade from middle of costa and incurved minutely waved line from cell to

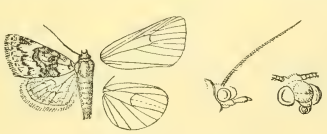


Fig. 180.—*Meroleuca microglossa*, ♂. ⅔.

inner margin; postmedial line black, oblique towards costa, then forming the outer edge of reniform, then incurved and slightly excurved at vein 1; subterminal line only defined by the brown suffusion on its inner side and with brown patch before it on costa with two white points on it, excurved below vein 7 and at middle and angled inwards at discal and submedian folds; a

terminal series of minute black lunules defined on inner side by slight white lunules ; cilia pale rufous. Hind wing whitish tinged with pale rufous especially on inner area ; a slight discoidal point, curved postmedial line, and diffused subterminal band ; the underside with small discoidal spot, curved diffused postmedial line, and fine terminal line.

Hab. Spain, Andalusia, 1 ♂ ; Syria. *Exp.* 28 millim.

Genus ARÆA, nov.

Type, *A. attenuata*.

Proboscis fully developed ; palpi upturned, slender, the 2nd joint reaching about to vertex of head and moderately fringed with hair in front, the 3rd short ; frons smooth ; eyes large, rounded ; antennæ of male minutely ciliated ; build slender ; head and thorax roughly clothed with hair and scales mixed, the pro- and metathorax with loose spreading crests ; tibiæ fringed with rather long hair ; abdomen with some rough hair at base but without crests, the female with long exserted ovipositor. Fore wing narrow and elongate, the apex rounded, the termen obliquely curved and hardly crenulate ; veins 3 and 5 from near angle of cell ; 6 from upper angle ; 9 from 10 anastomosing with 8 to form the areole ; 11 from cell. Hind wing with veins 3, 4 from angle of cell ; 5 obsolescent from middle of discocellulars ; 6, 7 stalked ; 8 anastomosing with the cell near base only.

A. Fore wing with black streak below base of cell ..... *attenuata.*
B. Fore wing without black streak below base of cell..... *indecora.*

3586. Aræa attenuata, n. sp.

Head and thorax grey mixed with dark brown ; palpi black except in front, frons with lateral black bars ; tarsi black with pale rings ; abdomen brownish grey. Fore wing grey tinged with brown and irrorated with black ; subbasal line black, somewhat dentate, from costa to submedian fold ; a black streak below the cell confluent with the lower edge of claviform which is narrow and acuminate ; antemedial line strong, black, slightly angled outwards below costa, then

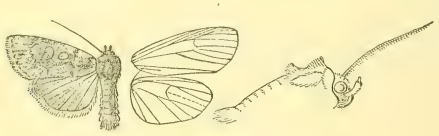


Fig. 181.—*Aræa attenuata*, ♂. ½.

minutely waved ; orbicular and reniform grey irrorated with brown and strongly defined by black, the former round or oblique elliptical, open above ; the discal and postmedial areas more strongly suffused with brown ; postmedial line strong, black, defined by whitish on outer side, bent outwards below costa, then dentate, strongly excurved to vein 4, then very oblique, some white points beyond it

on costa; subterminal line diffused, white, angled outwards at vein 7 and inwards at discal and submedian folds, at former to postmedial line, with short black streaks beyond it above and below vein 5; a terminal series of small black lunules; cilia chequered brown and whitish with a brown line through them. Hind wing whitish suffused with brown, a slight brown terminal line; cilia white with brownish line through them except towards tornus; the underside white irrorated with brown, a blackish discoidal spot and indistinct curved postmedial line.

Hab. Kashmir, Scinde Valley, 8000′ (*Leech*), 1 ♂ type, Goorais Valley, 7000′ (*Leech*), 1 ♀. *Exp.* 34 millim.

*3587. Aræa indecora.

Dyschorista indecora, Feld. Reis. Nov. pl. 110. f. 1 (1874).

♂. Head and thorax whitish mixed with pale rufous and a few blackish scales; palpi blackish above; tarsi blackish ringed with white; abdomen whitish tinged with red-brown. Fore wing whitish tinged with red-brown, the veins with slight dark streaks; subbasal line represented by double oblique black striæ from costa and a curved black streak below the cell; antemedial line double, waved, oblique, strongly incurved at vein 1; claviform defined by black, acute at extremity and with whitish patch beyond it; orbicular and reniform defined by black, the former with white centre, oblique and produced to a point below, the latter with brown centre and white annulus; a black striga from middle of costa, postmedial line double and filled in with white at costa, strongly bent outwards below costa, then minutely waved, slightly defined by white on outer side, excurved to vein 4, then oblique, some black points beyond it on costa; subterminal line absent; an oblique dark shade from termen just below apex; a terminal series of prominent black points; cilia chequered fuscous and whitish. Hind wing white, the termen suffused with brown from apex to vein 2; cilia white; the underside white, the costal area and terminal area to vein 2 irrorated with brown, a slight discoidal lunule and indistinct diffused curved postmedial line from costa to vein 3.

Hab. C. Colony, Capetown, Wynberg, type † ♂ in Coll. Rothschild. *Exp.* 30 millim.

Genus **POLYGRAMMATA**.

	Type.
Polygrammate, Hübn. Verz. p. 203 (1827)	*hebraica*.
Grammophora, Guen. Noct. i. p. 30 (1852)	*hebraica*.

Proboscis fully developed; palpi obliquely upturned, slender, the 2nd joint reaching to about middle of frons, the 3rd rather long; frons with transverse ridge at middle with corneous plate below it; eyes large, round; antennæ of male almost simple; thorax clothed almost entirely with scales and without crests; build slender; tibiæ slightly fringed with hair; abdomen with dorsal

crest at base only. Fore wing rather narrow, the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form a small areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from well below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3588. Polygrammata hebraica.

Polygrammate hebræicum, Hübn. Zutr. i. 10, ff. 25, 26 (1827); Smith, Cat. Noct. N. Am. p. 48.
Grammophora hebræa, Guen. Noct. i. p. 31, pl. 3. f. 5 (1852).

Head and thorax silvery white, the pro-, meso- and metathorax with paired black spots; palpi black towards tips with white rings at extremities of 2nd and 3rd joints; antennæ black except at base; fore and mid tibiæ black above, the tarsi black ringed with white; abdomen ochreous white with the basal crest black. Fore wing silvery white; a black point at base; subbasal line strong, black, acutely angled outwards on subcostal nervure and ending at submedian fold; antemedial line strong, black, interrupted in cell, slightly angled inwards below costa and strongly incurved at vein 1; orbicular a minute black annulus; reniform defined by black except above; medial line black, oblique from just below costa to median nervure and acutely angled inwards below submedian fold,

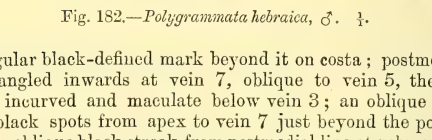


Fig. 182.—*Polygrammata hebraica*, ♂. ½.

a triangular black-defined mark beyond it on costa; postmedial line black, angled inwards at vein 7, oblique to vein 5, then interrupted, incurved and maculate below vein 3; an oblique series of small black spots from apex to vein 7 just beyond the postmedial line; an oblique black streak from postmedial line at submedian fold to termen above tornus; a terminal series of black spots with double series of small spots beyond them on the cilia. Hind wing ochreous white tinged with brown, the terminal area suffused with brown; cilia white with brownish striæ near base; the underside with brown bar from middle of costa with two spots beyond it, a discoidal point, three subterminal spots from costa to vein 5, a patch at apex with spot below it, and three small spots on the cilia.

Hab. U.S.A., Massachusetts, New York, 1 ♂, 1 ♀, Distr. of Columbia, Florida, Texas. *Exp.* 30 millim.

Larva. Head small, green. Body flattened; green, or red, a narrow yellowish subdorsal line, and many yellow dots over the body. Food-plant: Sour gum (*Nyssa sylvatica*).—H. G. D.

Genus **MELAGRAMMA**, nov.

Type, *M. expetita.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching vertex of head and moderately fringed with hair in front, the 3rd long; frons smooth; eyes large, round; antennæ of male serrate with fasciculate cilia and long bristles; thorax clothed chiefly with scales and without crests; build slender; tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex somewhat produced and acute, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from just below upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell to near middle.

3589. **Melagramma expetita.**

Bryophila expetita, Wlk. xv. 1647 (1858).

♂. Head and thorax white irrorated with black; sides of palpi, except 3rd joint, and of frons black; patagia black at base; fore and mid tibiæ with black marks, the fore tarsi black; abdomen ochreous. Fore wing white irrorated with black and dark brown, especially on postmedial costal area and terminal area towards apex; subbasal line black, acutely angled outwards in cell and

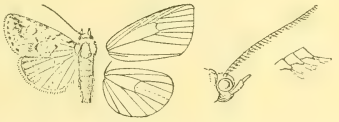


Fig. 183.—*Melagramma expetita*, ♂. ½.

ending in submedian fold; antemedial line oblique from costa to median nervure, incurved in submedian interspace and oblique to inner margin; a black point in middle of cell and curved discoidal bar; an oblique black striga from middle of costa; postmedial line arising from vein 7, excurved to vein 4, then bent inwards to below end of cell and sinuous to inner margin; postmedial area with some small white spots on costa; a diffused oblique fuscous fascia from apex to just beyond postmedial line and thence as a slightly excurved band to vein 3 on inner side of the faint whitish subterminal line; a terminal series of small black lunules. Hind wing ochreous, the terminal area tinged and irrorated with fuscous except towards tornus; the underside with the costal area irrorated with fuscous.

Hab. Brazil, Rio Janeiro; Argentina, Gran Chaco, Florenzia (*Wagner*), 1 ♂. *Exp.* 30 millim.

Genus **AGROTISIA**, nov.

Type, *A. subhyalina.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching to about middle of frons, the scales at extremity produced to a point in front, the 3rd short, broadly scaled; frons smooth; eyes large, rounded; antennæ of male ciliated; head and thorax clothed chiefly with scales and without distinct crests; tibiæ moderately fringed with hair; abdomen without crests. Fore wing rather long and narrow, the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3590. Agrotisia subhyalina, n. sp.

♂. Head and thorax ochreous tinged with rufous; palpi above and sides of frons blackish; tarsi blackish with pale rings; abdomen ochreous, the anal tuft tinged with fulvous. Fore wing

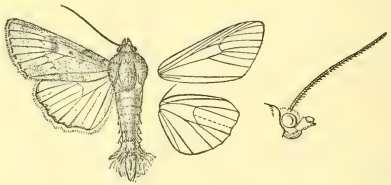


Fig. 184.—*Agrotisia subhyalina*, ♂. ½.

ochreous irrorated with brown, the interspaces of discal area semi-hyaline; subbasal line represented by a dark striga from costa; antemedial line blackish, oblique, waved, interrupted; orbicular represented by a blackish point; reniform a rather diffused fuscous lunulate mark; traces of a medial line diffused at costa and inner margin; postmedial line indistinct, slightly defined on outer side by ochreous, bent outwards below costa, then dentate, incurved below vein 4, some pale points beyond it on costa; the terminal area somewhat darker with faint traces of a curved dentate subterminal line; a terminal series of slight dark lunules; cilia ochreous with a dark line through them. Hind wing hyaline white, he veins and a fine terminal line brown; cilia white.

Hab. Peru, Callao (*J. J. Walker*), 1 ♂ type; Argentina, Mendoza, La Paz (*Bayne*), 2 ♂. *Exp.* 44 millim.

ALPHABETICAL INDEX.

abbreviata (*Noctua*), 379.
abida (*Hadena*), 321.
abida (Perigea), 321.
abjecta (*Mamestra*), 446.
abjecta (*Noctua*), 208.
abstemia (Perigea), 346.
accurata (Cobaliodes), 506.
accurata (*Plusia*), 506.
Achatia, 113.
Acherdoa, 591.
Acronyctinæ, 1.
adamantina (Euplexia), 247.
adnixa (*Hadena*), 187.
adnixa (Trachea), 187.
ænyra (*Lepidodes*), 257.
ænyra (Speocropia), 257.
ærata (*Noctua*), 381.
æthiops (*Callopistria*), 537.
æthiops (Eriopus), 537.
æthiops (*Hadena*), 90.
æthiops (*Noctua*), 381.
africana (Perigea), 319.
Agabra, 531.
agalla (*Celerena*), 340.
agalla (Perigea), 340.
agnata (*Dryobota*), 337.
agnonia (*Euplexia*), 340.
agnonia (Perigea), 343.
Agroperina, 398.
Agrostisia, 692.
alberta (*Hadena*), 199.
albertina (Eremobia), 413.
albicilia (*Amphipyra*), 22.
albicilia (Syntomopus), 22.
albiclava (Bryophila), 622.
albidisca (*Hadena*), 141.
albidisca (Trachea), 141.
albiflexura (*Mamestra*), 514.
albiflexura (Oroplexia), 514.
albifusa (Trachea), 140.
albigera (Perigea), 328.
albigeroides (Perigea), 322.
albiluna (Atrephes), 284.
albina (*Hadena*), 103.
albina (Parastichtis), 103.
albinota (*Hadena*), 144.
albinota (Trachea), 144.
albiorbis (*Erastria*), 370.
albiplaga (*Euplexia*), 237.
albipuncta (*Bryophila*), 613.
albipuncta (Chytonix), 613.
albipuncta (Heterochroma), 276.
albirivula (Oligia), 375.
albistriga (Eriopus), 538.
albolabes (Perigea), 321.
albolineola (Eriopus), 547.
albomacula (*Callopistria*), 553.
albomacula (Eriopus), 553.
albomaculata (*Euplexia*), 324.
albomaculata (*Mamestra*), 316.
albomaculata (Perigea), 316.
albonota (Euplexia), 237.
albonotata (*Bryophila*), 610.
albonotata (Chytonix), 610.
albopicta (*Anthophila*), 355.
albopicta (Microplexia), 355.
albovittata (Euplexia), 226.
aleuca (Cropia), 267.
algæ (Bryophila), 635.
algæ (*Noctua*), 635.
algoa (*Hadena*), 427.
algoa (Hypoplexia), 427.
aliena (*Noctua*), 207.
allecto (*Hadena*), 173.
allecto (Trachea), 173.
alliacea (*Noctua*), 667.
alopecurus (*Noctua*), 97.
alpheraci (Amphipyra), 39.
alpherakii (*Acosmetia*), 39.
alpigena (Eremobia), 418.
alpigena (*Hadena*), 418.
alticola (Eremobia), 421.
alticola (*Xylophasia*), 421.
aluensis (*Dissolophus*), 569.
aluensis (Eriopus), 569.
amanda (*Hadena*), 398.
amaranta (Euplexia), 234.
amathuria (*Cerigo*), 680.
ambigua (*Hadena*), 383.
ambigua (Oligia), 383.
amentata (*Noctua*), 471.
amethystina (*Noctua*), 588.

amethystina (Telesilla), 588.
amica (*Hadena*), 105.
amœna (Eremobia), 408.
amœna (*Nonagria*), 593.
amœnita (Argyrostrotis), 519.
amœnita (*Noctua*), 519.
amœnus (*Phæbophilus*), 408.
amphion (*Dargida*), 277.
amphion (Heterochroma), 277.
Amphipyra, 26.
amputatrix (*Hadena*), 105.
anæmica (Ancara), 253.
Ancara, 249.
anceps (*Noctua*), 180, 207.
anceps (Trachea), 207.
angelica (Cobaliodes), 507.
angelicus (*Cobalos*), 507.
anguliplaga (Trachea), 154.
anguliplaga (*Valeria*), 154.
angusta (*Gerbatha*), 369.
angusta (Oligia), 369.
angustipennis (*Laphygma*), 59.
anilis (*Hadena*), 419.
anodonta (Conservula), 500.
anodonta (*Phlogophora*), 500.
anormalis (Iambiodes), 659.
anormalis (*Tarache*), 659.
antennata (Parastichtis), 88.
antennata (*Xylophasia*), 88.
apameoides (Perigea), 293, 332.
apamiformis (Parastichtis), 99.
apamiformis (*Xylophasia*), 99.
Appana, 499.
aprepes (Pariambia), 660.
aquila (*Apamea*), 97.
arabs (*Hadena*), 85.
arabs (Parastichtis), 85.
Araea, 688.
Arboricornis, 358.
Arboricornus, 358.
arcta (*Hadena*), 386.
arcta (*Miana*), 387.
arcta (Oligia), 386.
arctica (*Hadena*), 105.
arctica (Parastichtis), 105.
arctides (*Hadena*), 387.
arctides (Oligia), 387.
arcuata (*Xylophasia*), 171.
argentata (*Eriopus*), 551.
argentilinea (*Callopistria*), 579.
argentilinea (Eriopus), 579.
argyrosticta (Eriopus), 551.
argyrosticta (*Perigea*), 551.
Argyrostrotis, 517.
armata (*Hadena*), 465.
armata (Pseudohadena), 465.
aroa (Data), 528.
aroa (*Thyria*), 528.
aroana (*Perigea*), 331.
arvicola (*Agrotis*), 463.
arvicola (Pseudohadena), 463.
ascoldis (Trachea), 213.
askoldis (*Apamea*), 213.
assimilis (*Hadena*), 424.
assueta (Dipterygia), 74.
assuetus (*Prometopus*), 74.
Atrephes, 284.
atricuprea (Perigea), 316.
atriplicis (*Noctua*), 150.
atriplicis (Trachea), 150.
atritornea (Trachea), 124.
atronitens (Amphipyra), 31.
atronitens (*Glottula*), 31.
atrovirens (*Hadena*), 147.
atrovirens (Trachea), 147.
attennata (Araea), 688.
Aucha, 661.
augens (Euplexia), 238.
aurantiaca (*Erastria*), 356.
aurantiaca (*Euplexia*), 142.
aurantiaca (Microplexia), 356.
aurantiaca (Trachea), 142.
aurantiicolora (*Hadena*), 87.
auranticolora (Parastichtis), 87.
aurea (*Polyphænis*), 681.
aureopuncta (Euplexia), 243.
aurifundens (Argyrostrotis), 524.
aurifundens (*Thyria*), 524.
aurigera (*Berrhæa*), 148.
aurigera (Trachea), 148.
auriplena (*Eurois*), 151.
auriplena (Trachea), 151.
auroviridis (Hadena), 142.
auroviridis (Trachea), 142.
azyga (Euplexia), 242.

babooni (Dipterygia), 65.
Bagada, 292.
bahamica (Perigea), 340.
baliola (*Orthosia*), 597.
barnesi (Trachea), 169.
barnesii (*Hadena*), 169.
basalis (*Apamea*), 93.
basilinea (*Noctua*), 183.
basilinea (Trachea), 183.
basistriga (*Hadena*), 183.
bayni (Callargyra), 515.
beatrix (Chutapha), 494.
beatrix (*Phlogophora*), 494.
belangeri (*Orthosia*), 404.
bella (*Lamprosticta*), 117.
bella (Trachea), 117.
bellinita (Argyrostrotis), 520.
bellinita (*Thyria*), 520.
bellona (Heterochroma), 274.
bellona (*Phlegetonia*), 274.
berinda (Perigea), 73, 328, 338.
Berrhæa, 113.
berylloides (Heterochroma), 283.
beryllus (Heterochroma), 282.
beryllus (*Valeria*), 282.
bicoloria (*Noctua*), 393.
bidens (*Hadena*), 166.
biloba (*Noctua*), 374.
binotata (*Mamestra*), 186.
binotata (Trachea), 186.
birnata (*Hadena*), 481.

birnata (Luperina), 481.
bischoffi (Eremobia), 421.
bischoffi (*Polia*), 421.
Bityla, 41.
bleonnensis (*Luperina*), 423.
bogotica (*Bryophila*), 614.
bogotica (Chytonix), 614.
boopis (Parastichtis), 102.
Borbotana, 584.
borea (*Hadena*), 423.
borealis (*Hadena*), 400.
bowreyi (*Decelea*), 269.
bremeri (*Agrotis*), 442.
breviuscula (Trachea), 129.
breviuscula (*Xylina*), 129.
bridghami (*Mamestra*), 376.
bridghami (Oligia), 376.
Brotolomia, 486.
brunnea (*Euplexia*), 210.
brunnea (Trachea), 210.
bryochlora (*Hadena*), 139.
bryochlora (Trachea), 139.
Bryoleuca, 686.
Bryomœa, 615.
Bryomoia, 615.
Bryophila, 618.
bultata (*Hadena*), 193.
burgessi (*Lucerina*), 469.
burgessi (Luperina), 469.

calamistrata (*Dianthœcia*), 230.
calamistrata (Euplexia), 230.
calida (*Xylina*), 62.
calidipes (*Mamestra*), 440.
calidipes (Sidemia), 440.
caliginosa (Dipterygia), 67.
caliginosa (*Hadena*), 67.
Callargyra, 515.
calligrapha (*Noctua*), 635.
callisina (Euplexia), 248.
Callixena, 55.
Callogonia, 589.
Callopistria, 531.
callopistrioides (Data), 528.
callopistrioides (*Thalpophila*), 528.
calma (Perigea), 312.
Calpiformis, 504.
caltheago (*Cosmia*), 474.
cana (*Miana*), 378.
canaria (*Bryophila*), 632.
canorufa (*Perigea*), 332.
capensis (*Apamea*), 332.
capensis (Perigea), 332.
captiuncula (*Apamea*), 394.
captiuncula (Oligia), 394.
carbonis (*Noctua*), 644.
carcoma (Perigea), 329.
cariosa (Parastichtis), 82.
cariosa (*Xylophasia*), 82.
carnitincta (Cropia), 266.
castanea (Diparopsis), 510.
castanea (*Hadena*), 104.
castanea (Parastichtis), 104.
catalina (*Hadena*), 189.
catalina (Trachea), 189.
catephiodes (Euplexia), 219.
cebea (Ancara), 250.
cebeæ (Borbotana), 585.
cebeæ (Dipterygia), 64.
cebeæ (Stenopterygia), 63.
cedica (Cropia), 263.
cedica (*Noctua*), 263.
cenola (Perigea), 335.
centralis (*Perigea*), 330, 333.
centralis (Trachea), 167.
centralis (*Xylophasia*), 167.
Centropodia, 452.
Centropus, 452.
Cerigo, 679.
cerivana (*Hadena*), 182.
cerivana (Trachea), 182.
Cerma, 651.
cervina (*Noctua*), 423.
cervina (*Perigea*), 331.
chalcirena (*Celæna*), 212.
chalcirena (Trachea), 212.
chalcochlora (*Eurois*), 146.
chalcochlora (Trachea), 146.
chalcoptera (*Amphipyra*), 27.
chalybeata (*Eurois*), 484.
chalybeata (Lasiplexia), 485.
chalybeata (*Mamestra*), 485.
chalybeata (*Nænia*), 217.
chalybeata (Paratrachea), 217.
chalybsa (Euplexia), 235.
Chandata, 113.
characta (*Hadena*), 190.
characta (Trachea), 190.
characterea (*Noctua*), 95.
chasiana (Oligia), 373.
Checupa, 111.
chenopodiphaga (*Mamestra*), 458.
chenopodiphaga (Pseudohadena), 458.
chinensis (Parastichtis), 94.
chinensis (*Xylophasia*), 94.
chloegrapha (Heterochroma), 271.
chloeropis (Phœopyra), 20.
chlorerythra (Euplexia), 231.
chloris (*Noctua*), 653.
chloriza (Eriopus), 559.
chlorocroa (Eriopus), 583.
chlorogrammata (*Euplexia*), 156.
chlorogrammata (Trachea), 156.
chlorographa (Heterochroma), 281.
chlorophila (Chytonix), 605.
chlorostigma (Chytonix), 608.
chlorostigma (*Hadena*), 608.
choëropis (*Euplexia*), 20.
Choluata, 584.
christophi (*Hadena*), 388, 435.
christophi (Sidemia), 435.
chromatica (Speocropia) 259.
chrysochlora (Trachea), 143.
chrysopepla (Arboricornis), 359.
chucha (Chytonix), 603.
chucha (*Epimorpha*), 603.
Chutapha, 491.
Chytonix, 600.
cilix (*Drobeta*), 593.
cilix (Phuphena), 593.
cinefacta (*Hadena*), 166.
cinefacta (Trachea), 166.

cinerescens (Polyphænis), 675.
cinerescens (*Triphænopsis*), 675.
cingalesa (*Appana*), 502.
cinifacta (*Hadena*), 183.
cinisigna (Conservula), 504.
cinnamomea (*Noctua*), 23.
cinnamomea (Syntomopus), 23.
circuita (Perigea), 327.
citima (*Orthosia*), 402.
clandestina (*Polia*), 422.
claudens (Eremobia), 414.
claudens (*Hadena*), 414.
claufacta (*Xylina*), 331.
clava (*Apamea*), 582.
clava (Eriopus), 582.
cluna (*Hadena*), 82.
Cobaliodes, 505.
Cobalos, 505.
cœlisigna (*Callopistria*), 557.
cœlisigna (Eriopus), 557.
cogitata (Agroperina), 399.
cogitata (*Xylophasia*), 399.
colorata (*Bryophila*), 408.
coluteæ (*Luperina*), 464.
coluteæ (Pseudohadena), 464.
combusta (*Noctua*), 97.
commixta (Trachea), 178.
commixta (*Xylophasia*), 178.
commoda (Pseudohadena), 459.
commoda (*Rhiza*), 459.
commoda (Trachea), 199.
commoda (*Xylina*), 199.
complicata (Eriopus), 576.
complicata (*Methorasa*), 576.
conciliata (*Apamea*), 177.
conciliata (Trachea), 177.
concisa (*Laphygma*), 330.
concisa (Perigea), 330.
Condica, 292.
conducta (*Caradrina*), 332.
confecta (Polyphænis), 673.
confecta (*Triphæna*), 673.
confederata (*Hadena*), 305.
confluens (Perigea), 317.
confucii (*Bryophila*), 630.
confundens (*Hadena*), 201.
confundens (*Mamestra*), 331.
confundens (Perigea), 331.
conica (*Noctua*), 23.
conjuncta (*Agrotis*), 119.
conjuncta (Hypoplexia), 426.
connecta (*Chytonix*), 267.
connecta (Cropia), 267.
connexa (*Gerbatha*), 368.
connexa (*Noctua*), 172, 679.
connivens (*Apamea*), 203.
connivens (Trachea), 203.
conradi (Agroperina), 402.
conradi (*Orthosia*), 402.
Conservula, 499.
conservuloides (Chutapha), 493
conservuloides (*Euplexia*), 493.
consocia (*Caradrina*), 330.
conspersa (*Amphipyra*), 29.
conspicua (*Luceria*), 480.
constellata (*Hadena*), 106.
consummata (*Hadena*), 201.
consummata (Trachea), 201.
contecta (*Dyschorista*), 438.
contecta (Sidemia), 438.
contenta (*Hadena*), 99.
contenta (*Mamestra*), 446.
contigua (*Noctua*), 207.
contigua (Perigea), 314.
contigua (*Prospalta*), 314.
contradicta (*Hadena*), 482.
contradicta (Trichoplexia), 482.
contristans (Bryophila), 645.
contumax (*Namangana*), 465.
contumax (Pseudohadena), 465.
cora (Cerma), 651.
cordata (*Bombyx*), 578.
cordata (Eriopus), 578.
corticea (*Noctua*), 445.
corvina (*Amphipyra*), 31.
Corythurus, 360.
costalis (Chutapha), 495.
Cotanda, 531.
crassipuncta (Pseudohadena), 461.
craushayi (Calpiformis), 504.
craushayi (*Conservula*), 504.
crispina (*Orthogonia*), 47.
cristata (*Hadena*), 85.
cristata (Parastichtis), 85.
cristifera (Dipterygia), 70.
crœsita (*Thyria*), 518.
Cropia, 260.
Crymodes, 408.
Cryphia, 618.
cuculliformis (*Hadena*), 79.
cuculliformis (Parastichtis), 79.
cuerva (Cerma), 653.
cuneata (*Mamestra*), 196.
cuneata (Trachea), 196.
cupentia (Perigea), 305.
cupentia (*Phalæna*), 305.
cuprea (*Euplexia*), 241.
cuprea (*Thalpophila*), 529.
cupreipennis (Amphipyra), 30.
cuprina (*Apamea*), 484.
cuprina (Lasiplexia), 484.
curoi (*Hadena*), 422.
curtipalpis (*Eliachræa*), 673.
curvata (*Hadena*), 186.
cyanea (Lasiplexia), 486.
cyanelinea (*Euplexia*), 115.
cyanelinea (Trachea), 115.
cyclica (Perigea), 315.
cyclopis (Eriopus), 547.
cymosa (*Hadena*), 104.
cytherea (*Noctua*), 679.

Data, 526.
datanidia (Fagitana), 593.
datanidia (*Nephelodes*), 593.
dayensis (Luperina), 474.
debilis (*Bryophila*), 632.
debilis (Euplexia), 238.
deccerti (Eremobia), 411.
Decelea, 260.
decens (*Perigea*), 327.
deceptricula (*Noctua*), 644.
deceptura (Bryophila), 623.
deceptura (*Diphtera*), 623.
decipiens (Eremobia), 412.
decipiens (*Hadena*), 412.
deckerti (*Hadena*), 411.
decorata (Euplexia), 228.
decorata (*Karana*), 228.
decorata (*Mamestra*), 511.
decorata (Oroplexia), 511.
decumana (Argyrostrotis), 525.
decumana (*Eriopus*), 525.
defigurata (Bityla), 41.
defigurata (*Xylina*), 41.
degener (*Noctua*), 635.
delicata (*Hadena*), 153.
delicata (Trachea), 153.
delineata (*Thalpophila*), 529.
demittens (*Mamestra*), 337.
denticulosa (*Apamea*), 93.
dentistrigata (*Mamestra*), 526.
dentistrigata (Perigea), 326.
depravata (*Agrotis*), 437.
depravata (Sidemia), 437.
desyllesi (*Luperina*), 472.
detrecta (*Xylina*), 331, 338.
devastator (*Phalæna*), 446.
devastatrix (Sidemia), 446.
diadela (*Bryophila*), 406.
diadela (Œderemia), 406.
diagona (Phuphena), 595.
didyma (*Noctua*), 211.
diffusa (*Exarnis*), 423.
diiara (Trachea), 193.
dilara (*Hadena*), 193.
diminuta (Polyphænis), 676.
diminuta (*Triphænopsis*), 676.
dinava (Borbotana), 587.
dinava (Oligia), 380.
dinava (Perigea), 325.
dinava (Trachea), 147.
dinavana (Trachea), 203.
dinawa (*Bagada*), 349.
dinawa (*Borbotana*), 587.
dinawa (*Euplexia*), 147.
dinawa (*Eurois*), 203.
dinawa (*Exyra*), 380.
dinawa (*Perigea*), 325.
dinawa (*Xanthoptera*), 349.
dionea (*Hadena*), 91.
dionea (Parastichtis), 91.
Diparopsis, 509.
Dipterygia, 64.
discidens (*Magusa*), 59.
discincta (*Microcœlia*), 312.
discincta (Perigea), 312.
discisignata (Euplexia), 232.
discivaria (*Bryophila*), 430.
discivaria (Tæniosea), 430.
discors (*Hadena*), 469.
discrepans (*Hadena*), 95.
discrepans (*Heliophobus*), 451.
discrepans (Margelana), 451.
discreta (*Anthophila*), 358.
discreta (Microplexia), 358.
Dissolophus, 531.
distans (*Hadena*), 126.
distans (Trachea), 126.
distincta (Bryophila), 638.
distorta (*Euplexia*), 121.
distorta (Trachea), 121.
ditata (*Luperina*), 678.
ditata (Polyphænis), 678.
ditissima (Argyrostrotis), 518.
ditissima (*Thyria*), 518, 519, 524.
divaricata (*Stictoptera*), 59.
diversa (*Apamea*), 472.
diversicolor (*Demas*), 388.
diversicolora (Oligia), 388.
divesta (*Hadena*), 181.
divesta (Trachea), 181.
divida (*Laphygma*), 59.
divisa (Bryophila), 643.
divisa (*Noctua*), 643.
doerriesi (*Hadena*), 388.
doleschalli (*Eriopus*), 540.
dolopis (Bryophila), 645.
dolorosa (*Mamestra*), 324.
dolorosa (Perigea), 324.
dubiosa (Cobaliodes), 506.
dubiosa (*Nyssocnemis*), 506.
dubitans (Agroperina), 398.
dubitans (*Mamestra*), 398.
dumerili (Luperina), 471.
dumerilii (*Noctua*), 471.
dumetorum (Eremobia), 423.
dumetorum (*Noctua*), 423.
duplicans (*Callopistria*), 556.
duplicans (Eriopus), 556.
duplicilinea (*Plusia*), 539.
Dypterygia, 64.

eburneifera (*Choluata*), 584.
Ecbolemia, 448.
Eccleta, 685.
eceicei (Borbotana), 586.
effusa (*Amphipyra*), 24.
effusa (Syntomopus), 24.
effusoides (*Amphipyra*), 439.
effusoides (Sidemia), 439.
egens (*Celæna*), 377.
egens (Oligia), 377.
ekeikei (*Borbotana*), 586.
elæastis (Eriopus), 570.
elegans (*Erastria*), 354.

elegans (Microplexia), 354.
elegantulus (*Eriopus*), 548.
elota (*Noctua*), 172.
engelhardtii (*Hadena*), 207.
enigra (Trachea), 199.
enigra (*Xylophasia*), 199.
enixa (*Perigea*), 346.
Epa, 113.
ephialtes (Gracilipalpus), 43.
ephialtes (*Noctua*), 43.
epomidion (*Noctua*), 95.
epopea (*Noctua*), 305.
erebina (Amphipyra), 33.
Eremobia, 408.
creptricula (*Bryophila*), 639.
erctina (*Bryophila*), 644.
erica (*Hadena*), 191.
erica (Trachea), 191.
eriopioides (Heterochroma), 279.
eriopoda (*Hadena*), 299.
eriopoda (Perigea), 299.
Eriopus, 531.
erratricula (*Miana*), 378.
erratricula (*Noctua*), 389, 393.
erubescens (*Pseudohadena*), 458.
erupta (*Noctua*), 395.
erythriris (Euplexia), 246.
espumosa (*Eurois*), 200.
espumosa (Trachea), 200.
ethela (Chytonix), 602.
ethela (*Ipimorpha*), 602.
ethiopica (Perigea), 347.
ethnica (*Hadena*), 198.
ethnica (Trachea), 198.
eubotes (Argyrostrotis), 525.
eubotes (*Thyria*), 525.
Eucarta, 587.
Eucropia, 286.
eucta (Bryophila), 631.
Eudipna, 260.
eugrapha (Speocropia), 260.
eugrapha (Trachea), 160.
Euherrichia, 531.
Eulepa, 531.
Euplexia, 219.
Euplexidia, 110.
Eurabila, 109.
Euromœa, 425.
Euromoia, 425.
Euthales, 618.
excurvata (*Bryophila*), 613.
excurvata (Chytonix), 613.
exhausta (*Hadena*), 384.
exhausta (Oligia), 384.
exornata (*Hadena*), 483.
exornata (Trichoplexia), 483.
exotica (Eriopus), 555.
expallescens (*Hadena*), 400.
expetita (*Bryophila*), 691.
expetita (Melagramma), 691.
expolita (*Miana*), 394.
exsiccata (*Hama*), 383.
exstincta (*Hadena*), 97.
extensa (Luperina), 480.
externa (*Hadena*), 428.
externa (Hypoplexia), 428.
extersa (*Hadena*), 186.
exulis (*Hadena*), 423.

fabrefacta (*Segetia*), 331.
Fagitana, 592.
farinulenta (*Hadena*), 422.
fascia (Bryophila), 627.
fascia (*Cerma*), 627.
fasciata (Euplexia), 226.
fasciata (*Raphia*), 386.
fasciata (Trachea), 204.
fasciata (*Xylophasia*), 204.
fasciculata (*Apamea*), 118.
fasciculata (Trachea), 118.
fasciuncula (*Noctua*), 377.
fasciuncula (Oligia), 377.
feisthamelii (*Hadena*), 205.
felina (Bryophila), 646.
felina (*Hadena*), 646.
ferens (Trachea), 175.
ferens (*Xylophasia*), 175.
ferrago (Luperina), 474.
ferrago (*Xanthia*), 474.
ferraria (Acherdoa), 591.
ferrea (Eremobia), 419.
ferrea (*Hadena*), 419.
ferrea (Microplexia), 357.
ferruginea (Eriopus), 540.
ferruginea (*Rusina*), 44.
fervida (Agroperina), 402.
festa (*Chariptera*), 651.
fibulata (*Dryobota*), 414.
fidelia (*Perigea*), 337.
finitima (*Apamea*), 183.
finitima (Trachea), 183.
firina (*Acontia*), 348.
fissipuncta (*Noctua*), 445.
fissipuncta (Sidemia), 445.
flavistigma (Parastichtis), 93.
flavistigma (*Xylophasia*), 93.
flavomaculata (*Acontia*), 662.
flavomaculata (Aucha), 662.
floridensis (Eriopus), 548.
fodinæ (Chytonix), 612.
fodinæ (*Miana*), 612.
formosissimalis (*Pyralis*), 543.
fortissima (Checupa), 112.
Fracara, 600.
fractilinea (*Hadena*), 380.
fractilinea (Oligia), 380.
franciscana (Cobaliodes), 508.
franciscanus (*Cobalus*), 508.
frauenfeldi (Neophœnis), 682.
frauenfeldi (*Polyphœnis*), 682.
fraudatricula (*Bryophila*), 647.
fraudatricula (*Noctua*), 647.
fraudulenta (*Hadena*), 177.
fraudulenta (Trachea), 177.
freyeri (*Noctua*), 206.
friabolus (*Luperina*), 208.
frivaldskyi (*Amphipyra*), 37.
fulgida (*Thyria*), 518.
fuliginosa (*Caradrina*), 336.
fuliginosa (Perigea), 336.

fumeola (Trachea), 186.
fumosa (*Hadena*), 185.
fumosa (Trachea), 185.
funerea (*Hadena*), 101.
funerea (Parastichtis), 101.
funesta (*Hadena*), 333.
furca (*Noctua*), 211.
furuncula (*Noctua*), 393.
furuncula (Oligia), 393.
furva (*Noctua*), 206.
furva (Trachea), 206.
fusca (*Erastria*), 370.
fuscomarginata (*Phlogophora*), 489.
fuscomarginata (Trigonophora), 489.
fuscostrigata (*Bagada*), 289.
fusipennis (Phuphena), 594.

galathea (Bryophila), 639.
galaxia (Perigea), 324.
galva (Cerma), 653.
Gaphara, 292.
gelata (*Hadena*), 423.
gelida (*Crymodes*), 424.
gemina (*Apamea*), 177.
gemina (*Noctua*), 179.
geminimacula (*Hadena*), 209.
geminimacula (Trachea), 209.
gemmifera (Euplexia), 229.
gemmifera (*Plusia*), 229.
gemmosa (*Hadena*), 206.
genetrix (*Hadena*), 193.
genetrix (Trachea), 193.
genialis (*Hadena*), 94.
genialis (Parastichtis), 94
gentilis (*Tæniosea*), 430.
glabella (Amphipyra), 39.
glabella (*Pyrophila*), 39.
glandifera (*Noctua*), 624.
glaucescens (Chytonix), 604.
glaucescens (*Chytonyx*), 604.
glaucescens (*Daxata*), 370.
glaucescens (Oligia), 370.
glaucochlora (Ancara), 253.
glaucoptera (*Agrotis*), 309.
glaucoptera (Perigea), 309.
glaucostigma (*Bryophila*), 371.
glaucostigma (Oligia), 371.
glaucula (*Bryophila*), 647.
Gnamptocera, 531.
gnoma (*Hadena*), 150.
Gracilipalpus, 42.
græseri (*Euplexia*), 117.
Grammophora, 689.
grandirena (Perigea), 310.
grandirena (*Xanthoptera*), 310.
granitalis (Bryophila), 647.
granitalis (*Gerbatha*), 647.
grisea (*Orthogonia*), 49.
grisea (Orthogonica), 49.
griseata (*Bryophila*), 336.
griseata (Perigea), 336.
griseimarginata (*Eurois*), 434.
griseimarginata (Rhynchoplexia), 434.
griseirena (Perigea), 306.
griseola (Ancara), 250.
grisiola (*Ancaroides*), 250.
griseorufa (Chytonix), 606.
grisescens (*Hadena*), 183.
grœnlandica (*Hadena*), 423.
Gryphadena, 454.
gueneei (*Luperina*), 471.
guttulalis (*Callopistria*), 571.
guttulalis (Eriopus), 571.

habilis (*Euplexia*), 238.
Habryntis, 498.
hadenoides (Cropia), 265.
hadenoides (Heterochroma), 280.
haelsseni (*Hadena*), 107.
halimi (*Mamestra*), 462.
Hama, 113.
hammoniensis (*Hadena*), 379.
Haploolophus, 531.
harfordi (*Ancara*), 245.
harfordi (Euplexia), 245.
harmonica (*Callopistria*), 655.
harmonica (Iambia), 655.
Harrisimemna, 648.
hastata (*Hadena*), 119.
hastata (Trachea), 119.
hausta (*Hadena*), 390.
havorthii (Oligia), 395.
havorthii (*Apamea*), 395.
hypatia (Heterochroma), 278.
hebræa (*Grammophora*), 690.
hebræicum (*Polygrammate*), 690.
hebraica (Polygrammata), 690.
hedeni (*Hadena*), 476.
hedeni (Luperina), 476.
helva (Agroperina), 403.
helva (*Orthosia*), 403.
Hemipachycera, 531.
hepatica (*Noctua*), 95.
hepatica (Parastichtis), 95.
Herræma, 429.
hercyniæ (*Hadena*), 205.
Herrichia, 531.
Heterochroma, 271.
Heterographa, 408.
hibernica (*Celæna*), 395.
hilli (Eremobia), 413.
hillii (*Hadena*), 413.
hipparion (*Mamestra*), 440.
hipparion (Sidemia), 440.
hippia (Perigea), 311.
hodita (*Bombycia*), 204.
hulstii (*Hadena*), 405.
humeralis (*Noctua*), 393.
hypatia (*Thyatira*), 278.
Hyperdasys, 531.
hypocritica (*Perigea*), 317.
Hypoplexia, 426.
hypothermes (Oligia), 362.

Iambia, 654.
Iambiodes, 659.
iaspis (*Apamea*), 312, 608.
icole (*Perigea*), 293.
idonea (*Hadena*), 82.
idumæa (Pseudohadena), 457.
ignitincta (*Hadena*), 352.
ignitincta (Perigea), 352.
Ilarus, 408.
illecta (*Perigea*), 332.
illocata (*Hadena*), 115.

illocata (Trachea), 115,
illustra (Agroperina), 401.
illustra (*Xylophasia*), 401.
illustrata (Euplexia), 225.
illyria (*Noctua*), 171.
illyrica (Trachea), 171.
imbella (*Perigea*), 330.
imbellis (Luperina), 472.
imbellis (*Mythimna*), 472.
imitata (*Myrtale*), 296.
imitata (Perigea), 296.
immunda (*Agrotis*), 462.
immunda (Pseudohadena), 462.
immunis (*Luperina*), 462.
immunis (Pseudohadena), 462.
impar (*Bryophila*), 624.
implexa (*Noctua*), 95.
impulsa (*Mamestra*), 210.
impulsa (Trachea), 210.
incallida (*Agrotis*), 480.
inclinata (*Celæna*), 293.
includens (*Hydrelia*), 396.
includens (Oligia), 396.
inconspicua (*Hadena*), 188.
indecisa (*Perigea*), 331.
indecora (Aræa), 689.
indecora (*Dyschorista*), 689.
indica (*Appana*), 501.
indica (Conservula), 502.
indica (*Cotunda*), 536.
indica (Dipterygia), 69.
indica (Eriopus), 536,
indica (*Phlogophora*), 503.
indica (Polyphænis), 678.
indica (*Thalpophila*), 678.
indigna (*Agrotis*), 464.
indigna (Cropia), 261.
indigna (*Decelea*), 261.
indigna (Pseudohadena), 464.
indirecta (*Hadena*), 188.
indirecta (Trachea), 188.
indistans (*Hadena*), 127.
indistans (Trachea, 127.
indocilis (Trachea), 179.
indocilis (*Xylophasia*), 179.
inepta (Polyphænis), 677.
inepta (*Triphænopsis*), 677.
inexacta (*Perigea*), 332.
inextricans (*Hadena*), 201.
infelix (*Perigea*), 214, 305.
inferalis (Iambia), 657.
infernalis (*Mamestra*), 206.
infesta (*Apamea*), 207.
inficita (Agroperina), 404.
inficita (*Graphiphora*), 404.
infusa (Cropia), 269.
infusa (*Decelea*), 269.
infuscata (*Hadena*), 90.
I-niger (*Noctua*), 211.
innota (Luperina), 478.
inordinata (*Hadena*), 165.
inordinata (Trachea), 165.
inornata (*Amphipyra*), 29.
inquinata (Centropodia), 453.
inquinata (*Hadena*), 453.
insignata (*Apamea*), 398, 399.
insignis (*Hadena*), 276.
insignis (Heterochroma), 276.
instructa (*Hadena*), 382.
instructa (Oligia), 382.
insularis (*Callopistria*), 557.
insularis (Eriopus), 557.
insulicola (*Miana*), 393.
intermedia (*Apamea*), 196.
intermedia (Trachea), 196.
intermittens (*Apamea*), 328.
intermixta (*Apamea*), 197.
intermixta (Trachea), 197.
interna (*Hadena*), 153.
interrupta (*Brotolomia*), 492.
interrupta (Chutapha), 492.
inutilis (*Luperina*), 436.
inutilis (Sidemia), 436.
invisa (*Miana*), 381.
iorrhoa (*Hadena*), 128.
iorrhoa (Trachea), 128.
iris (*Phlogophora*), 488.
iris (Trogonophora), 488.
jamaicensis (Eriopus), 532.
jamaicensis (*Listonia*), 269.
jancousci (Amphipyra), 32.
jancousci (Trachea), 161.
jankowskii (*Amphipyra*), 32.
jankowskii (*Hadena*), 161.
japonica (Dipterygia), 68.
Jaspidea, 618.
jelsci (Luperina), 467.
jelskii (*Polia*), 467.
jocasta (*Hadena*), 190.
jocasta (Trachea), 190.
jordana (*Orthosia*), 466.
jordana (Pseudohadena), 466.
juba (*Dyops*), 265, 267.
judaica (*Apamea*), 444.
judaica (Sidemia), 444.
juventina (Eriopus), 543.
juventina (*Noctua*), 543.

kalma (*Chytonyx*), 312.
Karana, 219.
kebea (*Ancaroides*), 250.
kebeæ (*Alibama*), 63.
kebeæ (*Borbotana*), 585.
kebeæ (*Dipterygia*), 64.
khasiana (*Bryophila*), 373.
kosakka (*Hadena*), 149.

labecula (Bryophila), 637.
laches (Paratrachea), 216.
laches (*Valeria*), 216.
laciniosa (*Chloantha*), 455.
laciniosa (Pseudohadena), 455.
lacruma (*Alibama*), 215.
lacruma (Trachea), 215.
lætevirens (*Diphtera*), 227.
lætevirens (Euplexia), 227.
lævigata (*Hadenella*), 392.
lævigata (Oligia), 392.
lagopus (*Noctua*), 543.
lamda (*Noctua*), 211.
lancea (*Celæna*), 395.
lancea (*Noctua*), 211.

larentica (*Amyna*), 615.
larentica (Pseuderastria), 615.
largetaui (*Polyphænis*), 670.
laphygmoides (*Carâdrina*), 330.
Lasiosceles, 526.
Lasiplexia, 483.
lateritia (Agroperina), 400.
lateritia (*Phalæna*), 400.
laticlava (Chytonix), 611.
latipennis (*Briarda*), 664.
latireptana (*Erastria*), 390.
latreillei (Eriopus), 575.
latreillei (*Noctua*), 575.
latruncula (*Noctua*), 381.
lemur (*Phalæna*), 50.
lenis (Margelana), 450.
lenis (*Phæbophilus*), 450.
leonina (*Hadena*), 332.
leprosa (Perigea), 307.
leprosa (*Polydesma*), 307.
leucanioides (Perigea), 344.
leucobasis (Eriopus), 581.
leucobasis (*Euplexia*), 432.
leucobasis (Monoptya), 432.
leucodon (*Hadena*), 166.
leucodon (Trachea), 166.
leucodonta (Trachea), 152.
leucographa (*Heterochroma*), 584.
leucomelæna (Bryophila), 627.
leuconephra (*Miana*), 389.
leuconephra (Oligia), 389.
leucopera (Trachea), 138.
leucopis (Perigea), 351.
leucoptya (Perigea), 292.
leucorina (Magusa), 57.
leucoscelis (*Polia*), 414.
leucospila (Perigea), 315.
leucospila (*Prospalta*), 315.
leucosticta (Speocropia), 258.
leucostigma (Euplexia), 249.
leucostigma (*Noctua*), 211.
leucostigma (Parastichtis), 106.
leucostigma (*Xylophasia*), 106.
leucostrota (Perigea), 310.
leucotoma (Eriopus), 554.
lichenea (Bryophila), 628.
lichenea (Mionides), 617.
lichenes (*Noctua*), 624.
lignaris (Dipterygia), 74.
lignaris (*Hadena*), 74.
lignea (Eurabila), 109.
lignicolora (Parastichtis), 88.
lignicolora (*Xylophasia*), 88.
lignigera (Perigeodes), 288.
lignigera (*Rusicada*), 288.
lignosa (Perinæenia), 21.
liguris (*Bryophila*), 624.
lineata (*Dargida*), 283.
lineata (Perigea), 334.
lineata (Heterochroma), 283.
lineata (*Tæniocampa*), 334
Listonia, 260.
literata (Bryophila), 628.
literata (*Dianthæcia*), 145.
literata (Trachea), 145.
literosa (*Noctua*), 389.
literosa (Oligia), 389.
lithoplasta (*Bryophila*), 406.
lithoplasta (Œderemia), 406.
lithoxylea (*Noctua*), 83.
lithoxylea (Parastichtis), 83.
littera (Fagitana), 592.
livida (Amphipyra), 31.
livida (*Noctua*), 31.
loculata (*Luceria*), 480.
lona (*Hadena*), 170.
lona (Trachea), 170.
longula (*Hadena*), 443.
longula (Sidemia) 443.
lucetta (*Perigea*), 323.
lucia (*Hadena*), 151, 157.
lucia (Trachea), 157.
lucilla (Polyphænis), 674.
lucilla (*Triphænopsis*), 674.
luciola (*Noctua*), 35.
lucipara (Euplexia), 240.
lucipara (*Noctua*), 240.
luculenta (*Noctua*), 97.
lugens (*Noctua*), 211.
luma (*Dargida*), 281.
luma (Heterochroma), 281.
lunato-strigata (*Noctua*), 471.
lunulina (*Noctua*), 208.
Luperina, 466.
lupula (*Noctua*), 369.
luteifrons (*Dianthæcia*), 513.
luteifrons (Oroplexia), 513.
luteocinerea (*Hadena*), 192.
luteocinerea (Trachea), 192.
lutescens (*Bryophila*), 625.
lutosa (Agroperina), 403.
lutosa (*Orthosia*), 403.
luxa (*Perigea*), 338.

macerata (*Hadena*), 164.
macerata (Trachea), 164.
Macronoctua, 431.
mactata (*Apamea*), 174.
mactata (Trachea), 174.
maderensis (*Bryophila*), 632.
mæonis (Bryophila), 640.
mærens (*Miana*), 374.
magna (Amphipyra), 27.
magna (Perigeodes), 289.
magna (*Xanthoptera*), 289
magniclavis (*Dipterygia*), 244.
magniclavis (Euplexia), 244.
Magusa, 55.
maillardi (Eremobia), 423.
maillardi (Eriopus), 551.
maillardi (*Noctua*), 423.
malayica (*Orthogonia*), 290.
malayica (Perigeodes), 290.
malezieuxi (Trachea), 154.
malezieuxi (*Valeria*), 154.
mandschurica (*Hadena*), 107.
mandschurica (Heræma), 429.
mandschurica (*Pachnobia*), 429.
Mania, 49.
manifesta (*Rhiza*), 459.
manta (Eriopus), 581.
manta (*Methorasa*), 581.
Margelana, 449.
marginelota (Bryophila), 633.
mariæ (*Eustrotia*), 396.
marina (Cerma), 652.

marina (*Hadena*), 162.
marina (Trachea), 162.
marmorata (*Hadena*), 423.
marmorata (Harrisimemna), 650.
marshallana (*Agrotis*), 446.
matura (*Phalæna*), 679.
matura (Thalpophila), 679.
maura (Mania), 50.
maura (*Noctua*), 50.
medialis (Œderemia), 407.
megastigma (*Hadena*), 148.
meissonieri (*Hadena*), 418.
melachlora (Bryomœa), 616.
melachlora (*Bryomoia*), 616.
Melagramma, 691.
melanistis (Euplexia), 243.
melanobasis (*Euplexia*), 123.
melanobasis (Trachea), 123.
melanochlora (*Bryophila*), 607.
melanochlora (Chytonix), 607.
melanocycla (Euplexia), 239.
melanodonta (Oligia), 362.
melanodonta (Trachea), 122.
melanoleuca (*Bryophila*), 122.
melanoleuca (*Euplexia*), 212.
melanoleuca (Trachea), 122.
melanospila (Trachea), 149.
meleagris (*Perigea*), 333.
mendacula (*Noctua*), 635.
meres (Argyrostrotis), 521.
meres (*Thyria*), 521.
meretricula (*Noctua*), 381.
Meroleuca, 687.
Mesolomia, 486.
mesophæa (Œdiplexia), 218.
Metachrostis, 618.
metallica (Euplexia), 245.
metallica (*Hadena*), 274.
metallica (*Mamestra*), 245.
metarhoda (Perigea), 349.
meterythra (Neophænis), 683.
Methorasa, 531.
meticulosa (*Noctua*), 487.
meticulosa (Trigonophora), 487.
mexicana (*Callopistria*), 564.
mexicana (Eriopus), 564.
Miana, 361.
micans (Amphipyra), 37.
microglossa (Meroleuca), 687.
microglossa (*Pœcilia*), 687.
Micromania, 42.
Microplexia, 354.
microptera (Eriopus), 574.
microspila (Trachea), 149.
miltophæa (Bryophila), 629.
mimica (Perigea), 297.
minor (Aucha), 666.
minor (*Callopistria*), 566.
minor (Conservula), 503.
minor (Eriopus), 566.
minorata (*Dipterygia*), 71.
minthe (Cropia), 270.
minthe (*Dyops*), 263, 270.
minuscula (Oligia), 385.
minuscula (*Orthosia*), 385.
minuta (*Callopistria*), 565.
minuta (Eriopus), 565.
minuta (Pseudohadena), 460.
Mionides, 616.
mira (*Luperina*), 417.
miranda (Eriopus), 571.
miscellus (*Hadena*), 163.
miselioides (*Hadena*), 163.
miselioides (Trachea), 163.
misella (Ecbolemia), 448.
misella (*Margelana*), 448.
misera (*Hadena*), 385.
misera (Oligia), 385.
mixta (Euromœa), 425.
mixta (*Euromoia*), 425.
mniochlora (*Hadena*), 138.
mniochlora (Trachea), 138.
mniochroa (Chytonix), 607.
mobilis (*Perigea*), 293.
moderata (*Apamea*), 211.
modesta (Bryophila), 630.
modica (*Apamea*), 194.
modica (Trachea), 194.
modiola (*Hadena*), 195.
modiola (Trachea), 195.
mollissima (Eriopus), 568.
molochina (*Noctua*), 400.
molybdea (Amphipyra), 38.
monetifera (Eriopus), 577.
monoglypha (*Noctua*), 90.
monoglypha (Parastichtis), 90.
monolitha (*Amphipyra*), 28.
Monoptya, 432.
monostigma (*Opigena*), 62.
montana (Eremobia), 420.
montana (*Polia*), 420.
montana (*Xylophasia*), 165.
morio (*Gortyna*), 395.
Mormo, 49.
morna (Agroperina), 405.
morna (*Hadena*), 405.
multicolor (*Hadena*), 100.
muticolora (Parastichtis), 100.
multipunctata (Perigea), 353.
muralis (Bryophila), 624.
muralis (*Noctua*), 624.
muscivirens (Mania), 51.
muscivirens (*Mormo*), 51.
muscosa (Chytonix), 601.
muscosa (*Cyrima*), 601.
muscosa (*Erastria*), 356.
muscosa (Microplexia), 356.
muscosa (*Nœnia*), 161.
musicalis (*Noctua*), 83.
musicalis (*Xylophasia*), 84.
mustelina (*Hadena*), 195.
mustelina (Trachea), 195.
mustia (Perigea), 339
mutica (Eremobia), 420.
mutica (*Luperina*), 420.
Myrtale, 292.

nadgani (Oligia), 364.
nadgani (*Sclepa*), 364.
naolina (Perigea), 352.
naolina (*Tæniocampa*), 352.
natalensis (Eriopus), 567.
nebulifera (*Polyphænis*), 668.
nebulosa (*Noctua*), 183.
nectens (Aucha), 664.
nectens (*Triphæna*), 664.
Neophænis, 681.
Neopistria, 530.
nephelea (Microplexia), 357.
nephelea (*Naranga*), 357.
nephrosticta (Eriopus), 572.
niccerli (Luperina), 469.
nicea (Dipterygia), 75.
nicea (*Xanthoptera*), 75.
nickerlii (*Apamea*), 469.
nictitans (*Noctua*), 211.
nigribarbata (Trachea), 129.
nigribasalis (Chytonix), 611.
nigricans (*Noctua*), 208.
nigricostata (Parastichtis), 79.
nigridia (*Xanthoptera*), 290.
nigrior (Parastichtis), 81.
nigrior (*Xylophasia*), 81.
nigrostrigata (*Bagada*), 113.
nigrostrigata (Checupa), 113.
nilgiria (Bryophila), 621.
nitens (*Spælotis*), 161.
nitens (Trachea), 161.
nivalis (*Apamea*), 213.
niveicostatus (*Pseudolimacodes*), 592.
niveigutta (Eriopus), 583.
niveigutta (*Eulepa*), 583.
niveiplaga (*Hadena*) 204.
niveiplaga (Trachea), 204.
niveopicta (*Ochria*), 317.
nivescens (*Dianthœcia*), 141.
nivifascia (Borbotana), 584.
Noctuidæ, 1.
noctuiformis (Euplexidia), 110.
nocturna (*Callopistria*), 654.
nocturna (Corythurus), 360.
nocturna (*Dipterygia*), 69.
nocturna (Iambia), 654.
nocturnus (*Corythurus*), 360.
norma (*Hadena*), 396.
notabilis (*Panolis*), 508.
notabilis (Syrrusis), 508.
novæguineæ (Euplexia), 229.
novæguineæ (*Yula*), 229.
novaguinensis (Phæopyra), 20.
novaguinensis (*Protagrotis*), 20.
nubila (*Apamea*), 486.
nubila (*Erastria*), 370.
nubila (Lasiplexia), 486.
nubilaris (*Ophiusa*), 43.
nunatrum (*Noctua*), 445.
nyctichroa (Mania), 53.
nyctichroa (Oligia), 397.

Obana, 531.
oberthuri (Palyphænis), 672.
obliqua (*Fagitana*), 599.
obliqua (Phuphena), 599.
obliquifascia (*Bryophila*), 373.
obliquilimbata (*Amphipyra*), 28.
obliquiorbis (*Apamea*), 96.
obliterans (Ancara), 252.
obliviosa (*Mamestra*), 400.
oblonga (*Noctua*), 208.
oblonga (Trachea), 208.
obscura (*Amphipyra*), 28.
obscura (*Bryophila*), 624.
obscura (*Callopistria*), 543.
obscura (*Hadena*), 90.
obscura (*Noctua*), 179.
obscura (Trachea), 179.
obtusa (*Helotropha*), 396.
obtusa (Oligia), 396.
occidens (Eriopus), 561.
occidens (*Hadena*), 103
occidens (Parastichtis), 103.
ochraceata (*Polyphænis*), 681.
ochraceus (*Dissolophus*), 569.
ochroleuca (Eremobia), 409.
ochroleuca (*Noctua*), 409.
ochrophæa (Bryophila), 631.
ochrota (Bryophila), 641.
octophora (Perigea), 350.
oculea (*Noctua*), 211.
Œderemia, 405.
Œdiplexia, 218.
œnistis (Magusa), 56.
oleracea (*Phalœna*), 423.
Oligia, 361.
olivacea (*Berrhœa*), 144.
olivacea (Cerma), 653.
olivacea (Chutapha), 496.
olivacea (*Euplexia*), 496.
olivacea (Trachea), 144.
olivaria (Magusa), 55.
olivescaria (*Ancara*), 54.
olivescaria (Mania), 54.
onusta (Macronoctua), 431.
onychina (*Apamea*), 389.
ophiogramma (*Noctua*), 374.
ophiogramma (Oligia), 374.
opposita (*Mamestra*), 200.
opposita (Trachea), 200.
opulenta (*Epilecta*), 670.
orbifera (Magusa), 59.
orbifera (*Xylina*), 59.
ordinaria (Dipterygia), 73.
ordinaria (*Mamestra*), 446.
ordinarius (*Prometopus*), 73, 74.
orenburghensis (*Dyschorista*), 445.
ornata (*Varina*), 591.
orophora (*Euplexia*), 139.
Oroplexia, 510.
Orthogonica, 45.
otiosa (*Perigea*), 331.
oxybiensis (*Bryophila*), 644.
oxydata (*Euplexia*), 106.

pabulatricula (*Noctua*), 172.
pabulatricula (Trachea), 172.
pagetolophus (*Perigea*), 318.
pallens (*Phlogophora*), 494.
palliatricula (*Bryophila*), 608.
palliatricula (Chytonix), 608.
pallida (*Amphipyra*), 34.
pallida (Bityla), 42.
pallida (*Bryophila*), 636.

pallida (Dipterygia), 72.
pallida (*Hadena*), 90.
pallida (*Orthosia*), 42.
pallidior (*Hadena*), 393.
pallidisca (*Erastria*), 370.
pallidisca (Oligia), 370.
palliola (Bryophila), 647.
palliola (*Noctua*), 647.
pallirena (Eucropia), 286.
pallirena (*Hadena*), 286.
palpalis (*Condica*), 305.
panamensis (Argyrostrotis), 526.
panamensis (*Callopistria*), 526.
par (*Noctua*), 624.
paralella (*Fagitana*), 598.
paralella (Phuphena), 598.
Parastichtis, 76.
parastichtoides (Perigea), 344.
Paratrachea, 216.
parcata (*Hadena*), 198.
parcata (Trachea), 198.
Pariambia, 660.
parietum (*Miana*), 386.
partita (*Chandata*), 114.
partita (Trachea), 114.
parva (Perigea), 320.
parva (*Prospalta*), 320.
parvimacula (Chytonix), 609.
passer (Luperina), 480.
passer (*Mamestra*), 480.
patina (Dipterygia), 71.
patina (*Hadena*), 71.
patula (*Bryophila*), 617.
patula (Poliobrya), 617.
paulina (Bryophila), 641.
paupera (*Craniophora*), 368.
paupera (Oligia), 368.
paupera (*Perigea*), 331.
pauperata (*Hadena*), 332.
pausis (*Hadena*), 192.
pausis (Trachea), 192.
paviæ (*Tæniocampa*), 188.
paviæ (Trachea), 188.
pectinata (Euplexia), 221.
penita (*Litharodia*), 396.
perbellis (*Tæniosea*), 430.
perflua (Amphipyra), 34.
perflua (*Noctua*), 34.
perfusa (*Noctua*), 23.
periculosa (*Brotolomia*), 492.
periculosa (Chutapha), 497.
periculosa (*Phlogophora*), 497.
Perigea, 292.
Perigeodes, 287.
Perinænia, 21.
Peripyra, 25.
perla (Bryophila), 625.
perla (*Noctua*), 625.
perlina (*Bryophila*), 625.
perloides (*Bryophila*), 624.
pernix (*Noctua*), 422.
perparvula (Perigea), 347.
perpenoa (*Hadena*), 176.
perpenoa (Trachea), 176.
perstriata (Parastichtis), 89.
petrea (Bryophila), 646.
petricolor (Bryophila), 637.
petrovna (*Leptina*), 597.
petrovna (Phuphena), 597.
pexa (*Luperina*), 463.
pexa (Pseudohadena), 463.
Phæbophilus, 408.
phæochroa (Mania), 53.
phæogona (Eriopus), 535.
Phæopyra, 19.
phila (Cropia), 264.
phila (*Dyops*), 264.
Philopyra, 26.
phlœca (Atrephes), 285.
Phosphila, 113.
Photedes, 361.
phraortes(Argyrostrotis), 522.
phraortes (*Thyria*), 522.
Phuphena, 593.
phytolacca (Heterochroma), 273.
phytolacca (*Noctua*), 273.
picturata (*Agrotis*), 231.
picturata (Euplexia), 231.
pinastri (*Noctua*), 66.
pineti (Bryophila), 643.
placida (*Agrotis*), 203.
Placodes, 587.
placodoides (Eriopus), 540.
plagiata (*Celæna*), 293.
plana (*Orthogonia*), 46.
plana (Orthogonica), 46.
platinea (Eremobia), 418.
platinea (*Polia*), 418.
Platydasys, 531.
plebeja (*Dyschorista*), 445
plebeja (Sidemia), 445.
plumbago (*Perigea*), 330.
plumbeola (Bryophila), 630.
plumbeola (Euplexia), 235.
plumbeomarginata (Euplexia), 224.
plumbicincta (Cropia), 264.
plumbinotata (Orthogonica), 46.
Plusilla, 590.
plutonia (*Hadena*), 100.
plutonia (Parastichtis), 100.
pluviosa (*Eurois*), 105.
Pœcilia, 618.
poli (*Crymodes*), 424.
Poliobrya, 617.
poliochroa (Euplexia), 237.
poliomera (Cropia), 268.
poliomera (Perigeodes), 287.
poliopasta (Perigea), 308.
poliophæa (Bryophila), 622.
polychroa (Trachea), 214.
polycmeta (Euplexia), 248.
polyglypha (*Hadena*), 90.
Polygrammata, 689.
polyodon (*Noctua*), 90.
Polyphænis, 667.
pomula (*Noctua*), 643.
popofensis (Luperina), 475.
popofensis (*Ommatostola*), 475.
porphyra (*Dargida*), 279.
postflava (*Agrotis*), 677.
postflava (Polyphænis), 677.
postica (*Hadena*), 62.
posticata (Luperina), 470.
posticata (*Orthosia*), 470.
postochrea (*Bryophila*), 623.
præcellens (*Hadena*), 326.
prædunculata (*Noctua*), 381.
pratti (Data), 527.
pratti (*Epa*), 157.
pratti (*Lasiosceles*), 527.
pratti (Trachea), 157.
prodita (*Mamestra*), 332.
prolifera (*Celæna*), 327.
prolifera (Euplexia), 244.

prolifera (*Mamestra*), 244.
propinqua (*Polyphænis*), 668.
Prospalta, 292.
prospicua (*Noctua*), 668.
pryeri (Eriopus), 534.
pryeri (*Platydasys*), 533, 534.
Pseuderastria, 614.
pseudodyops (*Gerbatha*), 372.
Pseudohadena, 454.
Pseudolimacodes, 592.
psittacea (Neophænis), 684.
psittacea (*Polyphænis*), 684.
pteridis (*Noctua*), 543.
ptyophora (Oligia), 363.
pugnax (Pseudohadena), 460.
pulcherrima (*Epilecta*), 670.
pulcherrima (Polyphænis), 670, 672.
pulchrilinea (Eriopus), 542.
pulchrilinea (*Obana*), 542.
punctifera (*Celæna*), 341.
punctifera (Perigea), 341.
punctiplaga (*Ancara*), 252.
punctirena (*Hadena*), 326.
punctirena (Perigea), 326.
punctosa (*Perigea*), 327.
pungeleri (Eremobia), 416.
pungeleri (Heterographa), 416.
pupulla (*Hadena*), 327.
purpurea (Perigea), 319.
purpureofasciata (*Noctua*), 543.
purpurina (*Euplexia*), 106.
purpurina (Parastichtis), 106.
purpuripennis (*Apamea*), 597.
putris (*Noctua*), 97.
pyramidea (Amphipyra), 28.
pyramidea (*Noctua*), 28.
pyramidina (*Noctua*), 34.
pyramidoides (Amphipyra), 29.
pyrenæa (*Bryophila*), 625.
pyrochroma (*Bagada*), 348.
Pyrois, 26.
Pyrophila, 26.
pyrosticta (Perigea), 351.
pyrostigma (Perigea), 350.

quadrimaculata (*Erastria*), 308.
quadrimaculata (Perigea), 308.
quadrinotata (Eriopus), 541.
quadrinotata (*Penicillaria*), 541.
quadrisigna (*Agrotis*), 203.
quæsita (*Hadena*), 88.
quieta (*Eriopus*), 575.

radicea (*Noctua*), 90.
radicosa (*Hadena*), 475.
radicosa (Luperina), 475.
randa (*Nænia*), 258.
randa (Speocropia), 258.
raptricula (*Noctua*), 643.
rava (*Noctua*), 211.
ravula (Bryophila), 639.
ravula (*Noctua*), 639.
receptricula (Bryophila), 636.
receptricula (*Noctua*), 636.
rectivitta (*Orthosia*), 291.
rectivitta (Perigeodes), 291.
recurvata (*Callopistria*), 551.
relicina (*Hadena*), 82.
relicina (Parastichtis), 82.
remissa (*Apamea*), 337.
remissa (*Noctua*), 179.
renardii (*Luperina*), 207.
repetita (*Apamea*), 119.
repetita (*Euplexia*), 373.
repetita (Trachea), 119.
repleta (*Callopistria*), 562.
repleta (Eriopus), 562.
replicans (Ancara), 251.
repressus (*Agrotis*), 35.
respondens (Neophænis), 681.
respondens (*Polyphlænis*), 681.
reticulata (Eriopus), 558.
retrahens (*Hadena*), 512.
retrahens (Oroplexia), 512.
rhadama (*Orthosia*), 423.
Rhiza, 454.
rhoda (Euplexia), 233.
Rhoptrotrichia, 531.
rhusia (*Apamea*), 473.
Rhynchoplexia, 433.
rivalis (*Mamestra*), 422.
rivularis (*Callopistria*), 546, 547, 558.
rivularis (Eriopus), 546.
rivulosa (*Heterochroma*), 263.
rorulenta (Parastichtis), 103.
rorulenta (*Xylophasia*), 103.
rosacea (*Appana*), 501.
rosacea (Conservula), 501.
rosalia (Plusilla), 590.
roseitelum (*Erastria*), 575.
roseola (*Euplexia*), 239.
roseonitens (*Mamestra*), 461.
roseonitens (Pseudohadena), 461.
roxana (*Mamestra*), 323.
roxana (Perigea), 323.
rubella (Luperina), 473.
rubella (*Orthosia*), 473.
rubellina (*Bryophila*), 640.
ruber (*Arboricornus*), 359.
rubeuncula (*Apamea*), 377.
rubicunda (*Erastria*), 568.
rubra (*Ancara*), 433.
rubra (Arboricornis), 359.
rubra (Rhynchoplexia), 433.
rubrescens (*Hadena*), 382.
rubrifusa (Perigea), 343.
rubrirena (*Mamestra*), 205.
rubrirena (Trachea), 205.
rufescens (*Caradrina*), 658.
rufescens (Chytonix), 601.
rufescens (Iambia), 658.
rufuncula (*Noctua*), 393.
runata (*Hadena*), 170.
rurea (*Noctua*), 97.
rurea (Parastichtis), 97.

sabrella (*Nænia*), 257.
sajanus (*Phæbophilus*), 412.
saldanha (Euplexia), 236.

samula (*Mamestra*), 338.
sancta (*Apamea*), 472.
sanguinipuncta (*Amphipyra*), 25.
sanguinipuncta (Peripyra), 25.
sarepta (Bryophila), 626.
sarepta (*Cerma*), 626.
sarepta (*Dargida*), 278.
sarepta (Heterochroma), 278.
sareptæ (*Perigea*), 299.
sarpida (*Magusa*), 59.
Sasunaga, 55.
satana (*Thyria*), 525.
satina (*Hadena*), 400.
scabriuscula (Dipterygia), 66.
scabriuscula (*Noctua*), 66.
schildei (*Hadena*), 424.
schlumbergeri (Pseudohadena), 457.
chrenci (Amphipyra), 36.
schrenckii (*Amphipyra*), 36.
sciaphila (*Amphipyra*), 24.
scione (Argyrostrotis), 523.
scione (*Thyria*), 523.
scita (Habryntis), 498.
scita (*Noctua*), 498.
scolopacina (*Noctua*), 379.
scolopacina (Oligia), 379.
scortea (*Hadena*), 171, 184.
Scotophila, 26.
scotophila (*Noctua*), 31.
scriptiplena (*Dianthœcia*), 533.
scriptiplena (Eriopus), 533.
scriptura (*Hadena*), 256.
criptura (Speocropia), 256.
scripturosa (Centropodia), 453.
scripturosa (*Xylina*), 453.
secalina (*Noctua*), 211.
secalis (*Noctua*), 211.
secalis (Trachea), 211.
secorva (Perigea), 342.
Selambina, 516.
selenosa (Perigea), 337.
semicana (*Miana*), 390.
semicana (Oligia), 390.
semicretacea (*Miana*), 393.
semifascia (Bryophila), 643.
semifascia (*Chytonyx*), 643.
semifascia (Euplexia), 241.
semifascia (*Hadena*), 241.
semifurca (*Celæna*), 341.
semilunata (*Hadena*), 164.
semilunata (Trachea), 164.
semiumbrosa (*Hadena*), 295.
semiumbrosa (Perigea), 295.
sensilis (Chytonix), 610.
sensilis (*Chytonyx*), 610.
separans (*Hadena*), 175.
separans (Trachea), 175.
separata (*Neuria*), 513.
separata (Oroplexia), 513.
Septis, 76.
sera (*Orthogonia*), 47.
sera (Orthogonica), 47.
sergei (*Acosmetia*), 40.
sergia (Pseudohadena), 456.
sergii (Amphipyra), 40.
sericata (*Noctua*), 668.
sericata (Polyphænis), 668.
sericea (Bityla), 41.
sericina (*Noctua*), 668.
serva (*Celæna*), 332.
sexguttata (*Notodonta*), 649.
Sidemia, 435.
siderea (Perigea), 313.
siderea (*Prospalta*), 313.
siderifera (*Hadena*), 202.
siderifera (Trachea), 202.
signata (Euplexia), 247.
sikkima (*Dipterygia*), 62.
similis (*Karana*), 229.
similis (*Trachea*), 150.
simonyi (Bryophila), 632.
simulatricula (*Bryophila*), 647.
simulatrix (Perigea), 298.
sinensis (Conservula), 501.
singularis (*Dargida*), 273.
sinuata (Euplexia), 220.
siri (*Mamestra*), 459.
siri (Pseudohadena), 459.
smaragdina (*Euplexia*), 157.
smaragdina (*Hadena*), 159.
smaragdina (Trachea), 159.
smaragdistis (Trachea), 137.
snelleni (*Sidemia*), 442.
sobria (*Gaphara*), 335.
sodalis (Parastichtis), 96.
sodalis (*Xylophasia*), 96.
Solenoptera, 486.
sora (*Hadena*), 169.
sora (Trachea), 169.
sordida (*Bryophila*), 640.
sordida (*Glottula*), 372.
sordida (*Noctua*), 207.
sordida (Oligia), 372.
spargens (*Hadena*), 333.
speciosa (*Noctua*), 442.
speciosa (Sidemia), 442.
spectabilis (*Hadena*), 217.
spencei (*Placodes*), 589.
Speocropia, 255.
spicea (Perigea), 348.
spodopterodes (Sidemia) 437.
spoliatricula (*Noctua*) 635.
sputator (*Hadena*), 398.
sputatrix (*Hadena*), 398.
standfussi (*Luperina*), 447.
standfussi (Sidemia), 447.
stellata (Perigia), 314.
stellata (*Prospalta*), 314.
stellifera (*Dianthœcia*), 125.
stellifera (Trachea), 125.
stelligera (Perigea), 318.
Stenopterygia, 61.
stictica (Bryophila), 634.
stictica (*Microphysa*), 634.
stigmata (*Dryobota*), 115.
stipata (*Hadena*), 468.
stipata (Luperina), 468.
stix (*Amphipyra*), 36.
stoliczcæ (Trachea), 120.
stoliczkæ (*Mamestra*), 120.
striata (*Bryophila*), 644.
striata (*Dyops*), 267.
striatovirens (Euplexia), 233.
strigidisca (*Apamea*), 92.
strigidisca (Parastichtis), 92.
strigifera (*Magusa*), 59.
strigilineata (*Callopistria*), 572.
strigilineata (Eriopus), 572.

strigilis (*Noctua*), 381.
strigilis (Oligia), 381.
strigula (*Noctua*), 635, 636.
struvei (*Hadena*), 211.
Stygiostola, 44.
styx (Amphipyra), 36.
subapicalis (Cropia), 261.
subapicalis (*Decelea*), 261.
subapicalis (*Hadena*), 279.
subaquila (*Hadena*), 477.
subaquila (Luperina), 477.
subarcta (*Hadena*), 389.
subaurata (*Perigea*), 293.
subaurea (Perigia), 293, 294.
subcedens (*Celæna*), 194.
subcurva (*Hadena*), 62.
subcurva (Stenopterygia), 62.
subfasciata (*Gerbatha*), 612.
subhyalina (Agrotisia), 692.
subjuncta (*Hadenella*), 391.
subjuncta (Oligia), 391.
sublustris (*Noctua*), 83.
sublustris (Parastichtis), 84.
submarginata (Parastichtis), 92.
submarginata (*Xylophasia*), 92.
submissa (*Noctua*), 180.
subornata (*Hadena*), 443.
subornata (Perigea), 317.
subornata (Sidemia), 443.
subpulchra (*Hadena*), 674.
subpulchra (Polyphænis), 674.
subpurpurea (*Phlogophora*), 490.
subpurpurea (Trigonophora), 490.
subrigua (Amphipyra), 37.
subsericata (Polyphænis), 669.
subviridis (Plataplecta), 116.
subviridis (Trachea), 116.
sufficiens (Perigea), 329.
suffuncula (*Apamea*), 389, 393.
suffusa (*Bryophila*), 625.
suffusa (*Mamestra*), 485.
suffusca (*Hadena*), 108.
suffusca (Parastichtis), 108.
surnia (*Amphipyra*), 28.
sutor (Perigea), 331, 338.
Syntomopus, 22.
Syrrusis, 508.

tabora (Bryophila), 638.
Tæniosea, 430.
tapeta (*Hadena*), 378.
tapeta (Oligia), 378.
taprobanæ (*Hadena*), 324.
Telesilla, 587.
temera (*Noctua*), 95.
templada (Cropia), 270.
templada (*Eudipna*), 270.
tenebricosa (Aucha), 663.
tenebricosa (*Triphæna*), 663.
tenebrosa (*Hadena*), 58.
tenebrosa (Magusa), 58.
tenebrosa (*Noctua*), 44.
tenebrosa (Stenopterygia), 61.
tenera (Eremobia), 415.
teneru (*Hadena*), 415.
terminalis (*Noctua*), 393.
terrago (*Hadena*), 477.
terrago (Luperina), 477.
terranea (*Mamestra*), 204.
testacea (Luperina), 471.
testacea (*Noctua*), 471.
tetera (*Celæna*), 335.
tetera (Perigea), 335.
tetra (Amphipyra), 34.
tetra (*Noctua*), 34.
texta (*Noctua*), 679.
Thalpophila, 679.
thalpophiloides (Data), 529.
thamanæa (Bryophila), 642.
thermida (Heterochroma), 275.
thoracica (*Bityla*), 41.
thoracica (*Mamestra*), 201.
thuaitesi (Iambia), 656.
thula (Eremobia), 410.
thula (*Hadena*), 410.
thwaitesi (*Methorasa*), 656.
Thyria, 517.
tincta (*Miana*), 394.
tociensis (Trachea), 156.
tokiensis (*Hadena*), 156.
tonsa (*Hadena*), 392.
tonsa (Oligia), 392.
toxaridia (*Hadena*), 124.
toxaridia (Trachea), 124.
Trachea, 113.
trajiciens (Selambina), 516.
tragopoginis (Amphipyra), 35.
tragopoginis (*Noctua*), 35.
transfrons (*Hadena*), 377.
transversa (Iambia), 657.
transversa (*Perigea*), 596.
transversa (Phuphena), 596.
transversa (*Tycracona*), 657.
transversalis (*Xylina*), 256.
Trichoplexia, 482.
trichroma (*Hadena*), 139, 256.
trichroma (Speocropia), 256.
trichroma (Trachea), 139.
tricycla (*Perigea*), 289.
tricycla (Perigeodes), 289.
trigona (Luperina), 478.
Trigonophora, 486.
trilinea (Bryoleuca), 686.
trilinea (*Miana*), 686.
trilinea (*Perigea*), 594.
trilineata (*Agabra*), 539.
trilineata (*Callopistria*), 538.
trilineata (Eriopus), 539.
trilineata (*Mamestra*), 25.
trinitensis (Eriopus), 550.
tripartita (Amphipyra), 32.
tripartita (*Apamea*), 514.
tripartita (Oroplexia), 514.
triphænoides (Aucha), 663.
triphænoides (*Briarda*), 663.
Triphænopsis, 637.
triplaga (*Dianthœcia*), 239.
triplaga (Euplexia), 239.
tripterygia (*Noctua*), 66.
tripuncta (*Apamea*), 395.
trisignata (*Grammophora*), 649.

trisignata (Harrisimemna), 649.
trita (*Hadena*), 346.
troglodyta (*Bryophila*), 639.
tulipifera (*Hadena*), 201.
tura (*Dianthœcia*), 598.
tura (Phuphena), 598.
turbulenta (*Phosphila*), 171.
turbulenta (Trachea), 171.
turcomana (*Amphipyra*), 35.
turcomanica (Gracilipalpus), 43.
turcomanica (*Micromania*), 43.
turpis (*Perigea*), 331.
tusa (*Hadena*), 181.
tusa (Trachea), 181.
tychoona (*Xylophasia*), 178.

u-alba (Phuphena), 597.
u-album (*Ceramica*), 597.
ulmea (*Noctua*), 34.
umbratica (*Noctua*), 44.
umbratica (Stygiostola), 44.
umbrifera (Dipterygia), 71.
umbrifera (*Hyboma*), 71.
umovi (Œderemia), 408.
umovii (*Bryophila*), 408.
una (*Hadena*), 385.
una (Oligia), 285.
unanimis (*Noctua*), 184.
unanimis (Trachea), 184.
unca (*Noctua*), 471.
undara (*Anophia*), 370.
unica (*Noctua*), 394.
unicincta (Eremobia), 415.
unicincta (*Hadena*), 415.
uniformata (*Hadena*), 90.
unita (Trachea), 168.
unita (*Xylophasia*), 168.
uscana (Trachea), 155.
uscana (*Valeria*), 155.

vacillans (*Hadena*), 337.
vacillans (Perigea), 337.
vagivitta (Dipterygia), 69.
vandalusiæ (*Bryophila*), 639.
variegata (*Acontia*), 661.
variegata (Aucha), 661.
variegata (Eriopus), 579.
variegata (*Hadena*), 208.
variegata (*Methorasa*), 579.
variegata (*Segetia*), 372.
Varina, 591.
vau-aurea (Argyrostrotis), 522.
v-brunnea (Conservula), 502.
v-brunneum (*Charidea*), 502.
v-brunneum (*Trigonophora*), 497.
vecors (*Perigea*), 337.
velans (Aucha), 665.
velutina (*Bryophila*), 657.
venata (*Callopistria*), 573.
venata (Eriopus), 573.
venata (Mania), 52.
venosa (*Cosmia*), 475.
venosa (*Dianthœcia*), 145.
venosa (Luperina), 475.
venosa (Trachea), 145.
venus (*Eriopus*), 551.
verbascoides (Parastichtis), 80.
verbascoides (*Xylophasia*), 80.
versicolor (*Margelana*), 449.
versicolora (*Callixena*), 57.
versicolora (Magusa), 57.
versicolora (Margelana), 449.
vesta (Aucha), 664.
veterata (*Perigea*), 470.
veterina (*Hadena*), 107.
veterina (Parastichtis), 107.
veternosa (Margelana), 451.
vicaria (*Hadena*), 479.
vicaria (Luperina), 479.
vilis (Bryophila), 632.
vilis (*Parastichtis*), 211.
villiana (Aucha), 666.
villiana (*Dinumma*), 666.
vinctuncula (*Noctua*), 393.
violacea (*Hadena*), 375.
violacea (*Hypernœnia*), 402.
violacea (Oligia), 375.
virescens (Bryophila), 633.
Virgo, 592.
virgo (*Abrostola*), 589.
virgo (Callogonia), 589.
virguncula (*Hadena*), 479.
virguncula (Luperina), 479.
viridacea (*Euplexia*), 138.
viridata (Fracara), 600.
viridata (*Noctua*), 600.
viridata (*Polyphœnis*), 668.
viridimicans (Cropia), 265.
viridimusca (*Hadena*), 159.
viridimusca (Trachea), 159.
viridinotata (Neopistria), 530.
viridinotata (*Perciana*), 530.
viridipicta (Ancara), 254.
viridis (*Celæna*), 158.
viridis (*Hadena*), 282.
viridis (Trachea), 158.
vitalba (*Noctua*), 680.
vitalba (Thalpophila), 680.
vittalba (*Hadena*), 680.
vollastoni (Chutapha), 492.
vulgaris (Oligia), 372.
vulgaris (Parastichtis), 86.
vulgaris (*Polydesma*), 372.
vulgaris (*Xylophasia*), 86.
vulgivaga (*Hadena*), 380.
vulnerata (*Miana*), 388.
vulnerata (Oligia), 388.
vultuosa (*Hadena*), 98.
vultuosa (Parastichtis), 98.

wallacii (*Eriopus*), 533.
wollastoni (*Phlogophora*), 492.

xanthioides (Perigea), 346.

xanthochloris (Polyphænis), 667.
xanthoptera (Eriopus), 545.
x-notata (*Noctua*), 471.
xuthophanes (Eccleta), 685.
Xylena, 76.
Xylophasia, 76.
xylophasioides (Perigea), 345.
xylophila (*Hadena*), 214.
xylophila (Trachea), 214.
yerburi (*Callopistria*), 560.
yerburi (Eriopus), 560.
ypsilon (*Gerbatha*), 368.
ypsilon (Noctua), 445.
ypsilon (Oligia), 368.
Yula, 219.
zelleri (Eremobia), 417.
zelleri (*Mamestra*), 417.
zeta (Eremobia), 422.
zeta (*Polia*), 422.
zetina (*Hadena*), 422.
zollicoferi (Sidemia), 448.
zollikoferi (*Noctua*), 448.

PRINTED BY TAYLOR AND FRANCIS, RED LION COURT, FLEET STREET.

B.M. (N.H.).
No. 21.

LIST OF THE CURRENT

NATURAL HISTORY PUBLICATIONS OF THE TRUSTEES OF THE BRITISH MUSEUM.

The following publications can be purchased through the Agency of *Messrs.* LONGMANS & Co., 39, *Paternoster Row, London, E.C.; Mr.* QUARITCH, 11, *Grafton Street, New Bond Street, W.;* and *Messrs.* DULAU & Co., 37, *Soho Square, W.*; or at the NATURAL HISTORY MUSEUM, *Cromwell Road, London, S.W.*

The History of the Collections contained in the Natural History Departments of the British Museum :—

Vol. I. Libraries; Botany; Geology; Minerals. Pp. xvii., 442. 1904, 8vo. 15*s.*

Vol. II. Separate historical accounts of the several collections included in the Department of Zoology. Pp. 782. 1906, 8vo. 30*s.*

Catalogue of the Books, Manuscripts, Maps, and Drawings in the British Museum (Natural History). Compiled by B. B. Woodward, Assistant in charge of the General Library, with some clerical assistance :—

Vol. I. A—D. Pp. viii., 500. 1903, 4to. 20*s.*
Vol. II. E—K. Pp. 501–1038. 1904, 4to. 20*s.*

Catalogue of the Specimens and Drawings of Mammals Birds, Reptiles, and Fishes of Nepal and Tibet. Presented by B. H. Hodgson, Esq., to the British Museum. 2nd edition. By John Edward Gray. Pp. xii., 90. [With an account of the Collection by Mr. Hodgson.] 1863, 12mo. 2*s.* 3*d.*

Catalogue of the Mammalia and Birds of New Guinea in the Collection of the British Museum. [With list of Species of New Guinea Birds, and those of the neighbouring Localities.] By John Edward Gray, Ph.D., F.R.S., and George Robert Gray, F.L.S., &c. Pp. 63. Woodcuts. 1859, 8vo. 1*s.* 6*d.*

2000 Wt 17876 10/08 D & S 9 33882

Report on the Zoological Collections made in the Indo-Pacific Ocean during the voyage of H.M.S. "Alert," 1881–2. Pp. xxv., 684. 54 Plates. 1884, 8vo. 1*l.* 10*s.*

Summary of the Voyage... ...	.. By Dr. R. W. Coppinger.
Mammalia	... „ O. Thomas.
Aves...	... „ R. B. Sharpe.
Reptilia, Batrachia, Pisces ...	... „ A. Günther.
Mollusca	... „ E. A. Smith.
Echinodermata	... „ F. J. Bell.
Crustacea	... „ E. J. Miers.
Coleoptera	... „ C. O. Waterhouse.
Lepidoptera	... „ A. G. Butler.
Alcyonaria and Spongiida ...	... „ S. O. Ridley.

Report on the Collections of Natural History made in the Antarctic Regions during the Voyage of the "Southern Cross." Pp. ix., 344. 53 Plates. 1902, Royal 8vo. 2*l.*

Mammalia	By Capt. G. E. H. Barrett-Hamilton.
Notes on Antarctic Seals ...	„ E. A. Wilson, M.B.
Extracts from the "Diary" of the late Nicolai Hanson.	—
Aves	„ Dr. R. Bowdler Sharpe.
Pisces...	„ G. A. Boulenger, F.R.S.
Tunicata	„ Prof. W. A. Herdman, F.R.S.
Mollusca	„ E. A. Smith.
Echinoderma	„ Prof. F. J. Bell.
Insecta	„ G. H. Carpenter and Hon. N. C. Rothschild.
Arachnida	„ Dr. E. L. Trouessart.
Crustacea	„ T. V. Hodgson.
Polychæta	„ Dr. A. Willey.
Gephyrea	„ A. E. Shipley.
Nematoda	„ Dr. von Linstow.
Cestoda	
Polyzoa	„ R. Kirkpatrick.
Porifera	
Anthozoa	„ Dr. L. Roule and S. J. Hickson, F.R.S.
Actiniæ	„ J. A. Clubb.
Hydrozoa	„ E. T. Browne.
Cryptogamia	„ A. Gepp, V. H. Blackman, and Miss E. S. Barton.
Rock Specimens	„ Dr. G. T. Prior.

National Antarctic Expedition, 1901–1904. [*Discovery Report.*] Natural History :—

Vol. I. Geology (Field-Geology : Petrography). Pp. xii., 160 : 10 plates, 72 text-figures, 2 maps. [With Index.] 1907, 4to. 1*l.* 10*s.*

Field-Geology	By H. T. Ferrar, M.A., F.G.S.
Rock-Specimens	„ G. T. Prior, M.A., D.Sc., F.G.S.

Vol. II. Zoology (Vertebrata : Mollusca : Crustacea). Pp. xiv., 355 : 33 plates (17 coloured), 146 text-figures, 1 map. 1907, 4to. 3*l.*

Mammalia (pp. 69 : 5 pls. [3 col.], 36 figs.).	By E. A. Wilson, M.B.
Aves (pp. 121 : 13 pls. col., 46 figs.) ...	
Anatomy of Penguins (pp. 28 : 1 pl., 8 figs.).	„ W. P. Pycraft.

National Antarctic Expedition, 1901–1904—*continued.*

Vol. II—*continued.*

Fishes (pp. 5; 2 pls.)	By G. A. Boulenger, F.R.S.
Cephalodiscus (pp. 67: 7 pls. [1 col.], 17 figs.).	„ W. G. Ridewood, D.Sc.
Mollusca. I.—Cephalopoda (pp. 2: 1 fig.).	„ W. E. Hoyle, D.Sc.
„ II.—Gastropoda (pp. 12, 1: 2 pls.).	„ E. A. Smith, I.S.O.
„ III.—Amphineura	
„ IV.—Nudibranchiata (pp. 28: 1 pl., 30 figs.).	„ Sir Chas. Eliot, K.C.M.G., LL.D.
„ V.—Lamellibranchiata (pp. 7: 1 pl.).	„ E. A. Smith, I.S.O.
Brachiopoda (pp. 2: 4 figs.)	
Crustacea I.—Decapoda (pp. 7) ...	
„ II.—Cumacea (pp. 6: 1 pl., 4 figs.).	„ W. T. Calman, D.Sc.

Vol. III. Zoology and Botany (Invertebrata: Marine Algæ, Musci). Pp. vi., 273: 51 plates, 8 text-figures, and 1 chart. 1907, 4to. 2*l.* 10*s.*

On Collecting in Antarctic Seas (pp. 10)	By T. V. Hodgson, F.L.S.
Mollusca. VI.—Pteropoda (pp. 15: 2 pls.).	„ Sir Charles Eliot, K.C.M.G., LL.D.
Crustacea. III.—Amphipoda (pp. 39: 13 pls.).	„ A. O. Walker, F.L.S.
„ IV.—Leptostraca (pp. 2: 2 figs.)	„ Dr. J. Thiele.
„ V.—Ostracoda (pp. 9: 3 pls.)	„ Prof. G. S. Brady, F.R.S.
„ VI.—Cirripedia (pp. 4: 1 pl.)	„ Prof. A. Gruvel.
Pycnogonida (pp. 72: 10 pls.)	„ T. V. Hodgson, F.L.S.
Acari (pp. 6: 1 pl.)	„ Dr. E. L. Trouessart.
Chætognatha (pp. 6: 1 chart)	„ Dr. G. H. Fowler, F.L.S.
Nematoda (pp. 4: 1 pl.)	„ Dr. O. von Linstow.
Cestoda (pp. 6: 1 pl.)	„ A. E. Shipley, F.R.S.
Coelentera. I.—Alcyonaria (pp. 15: 2 pls.).	„ Prof. S. J. Hickson, F.R.S.
„ II.—Hydroid Zoophytes (pp. 34: 4 pls.).	„ Prof. S. J. Hickson, F.R.S., and F. H. Gravely.
„ III.—Tentacles of a Siphonophore (pp. 3: 5 figs.).	„ Dr. J. Rennie.
Porifera. I.—Hexactinellida (pp. 25: 7 pls.).	„ R. Kirkpatrick.
Marine Algæ. I.—Phæophyceæ and Florideæ (pp. 15: 4 pls.).	„ A. Gepp and Mrs. E. S. Gepp.
„ „ II.—Corallinaceæ (pp. 2: 1 fig.).	„ M. Foslie.
Musci (pp. 6: 2 pls.)	„ J. Cardot.

Vol. IV. Zoology (various Invertebrata). Pp. iv., 281: 65 plates, 1 text-figure. 1908, 4to. 1*l.* 15*s.*

Mollusca. VII.—Solenogastres (pp. 13: 2 pls.).	By Dr. H. F. Nierstrasz.
Insecta.—Aptera (pp. 5: 1 pl.) ...	„ G. H. Carpenter, B.Sc., M.R.I.A.
Crustacea. VII.—Schizopoda (pp. 42: 8 pls.).	„ W. M. Tattersall, M.Sc.
„ VIII.—Copepoda (pp. 44: 7 pls.).	„ R. Norris Wolfenden, M.D.

National Antarctic Expedition, 1901–1904—*continued.*
Vol. IV—*continued.*

Echinoderma (pp. 16 : 5 pls.)	By F. Jeffrey Bell, M.A.
Echinoderm Larvæ (pp. 9 : 1 pl.) ...	„ E. W. McBride, M.A., F.R.S., and J. C. Simpson, B.Sc.
Myzostomidæ (pp. 26 : 1 pl. and 1 figure)	„ Dr. Rudolf Ritter von Stummer-Traunfels.
Sipunculoidea (pp. 6)	„ W. F. Lanchester, M.A.
Coelentera. IV.—Actiniæ (pp. 12 : 3 pls.)	„ J. A. Clubb, M.Sc.
Porifera. II.—Tetraxonida (pp. 56 : 19 pls.).	„ R. Kirkpatrick.
„ III.—Calcarea (pp. 52 : 12 pls.)	„ C. F. Jenkin, B.A.

A Monograph of Christmas Island (Indian Ocean) : Physical Features and Geology by C. W. Andrews, B.A., B.Sc., F.G.S., with descriptions of the Fauna and Flora by numerous contributors. Pp. xv., 337: 22 plates (7 coloured), a map, and 27 illustrations in text. [With Index.] 1900, 8vo. 20*s.*

First Report on Economic Zoology. By Fred. V. Theobald, M.A., &c. [With an Introduction, containing a Classification of Animals from the point of view of Economic Zoology, by Prof. E. Ray Lankester, LL.D., F.R.S.] Pp. xxxiv., 192. 18 Woodcuts. 1903, Roy. 8vo. 6*s.*

Second Report on Economic Zoology. By Fred. V. Theobald, M.A., &c. Pp. x., 197. 29 Illustrations. 1904, Roy. 8vo. 6*s.*

MAMMALS.

Catalogue of the Bones of Mammalia in the Collection of the British Museum. By Edward Gerrard. Pp. iv., 296. 1862, 8vo. 5*s.*

Catalogue of Monkeys, Lemurs, and Fruit-eating Bats in the Collection of the British Museum. By Dr. J. E. Gray, F.R.S., &c. Pp. viii., 137. 21 Woodcuts. 1870, 8vo. 4*s.*

Catalogue of Carnivorous, Pachydermatous, and Edentate Mammalia in the British Museum. By John Edward Gray, F.R.S., &c. Pp. vii., 398. 47 Woodcuts. 1869. 8vo. 6*s.* 6*d.*

Catalogue of Seals and Whales in the British Museum. By John Edward Gray, F.R.S., &c. 2nd Edition. Pp. vii., 402. 101 Woodcuts. 1866, 8vo. 8*s.*

——— Supplement. By John Edward Gray, F.R.S., &c., Pp. vi., 103. 11 Woodcuts. 1871, 8vo. 2*s.* 6*d.*

List of the Specimens of Cetacea in the Zoological Department of the British Museum. By William Henry Flower, LL.D. F.R.S., &c. [With Systematic and Alphabetical Indexes.] Pp. iv., 36. 1885 8vo. 1*s.* 6*d.*

Catalogue of Ruminant Mammalia (*Pecora*, Linnæus) in the British Museum. By John Edward Gray, F.R.S., &c. Pp. viii., 102. 4 Plates. 1872, 8vo. 3*s.* 6*d.*

Catalogue of the Marsupialia and Monotremata in the Collection of the British Museum. By Oldfield Thomas. Pp. xiii., 401. 4 Coloured and 24 plain Plates. [With Systematic and Alphabetical Indexes.] 1888, 8vo. 1*l.* 8*s.*

BIRDS.

Catalogue of the Birds in the British Museum :—

Vol. VII. Catalogue of the Passeriformes, or Perching Birds, in the Collection of the British Museum. *Cichlomorphæ* : Part IV., containing the concluding portion of the family Timeliidæ (Babbling Thrushes). By R. Bowdler Sharpe. Pp. xvi., 698. Woodcuts and 15 coloured Plates. [With Systematic and Alphabetical Indexes.] 1883, 8vo. 1*l.* 6*s.*

Vol. VIII. Catalogue of the Passeriformes, or Perching Birds, in the Collection of the British Museum. *Cichlomorphæ* : Part V., containing the families Paridæ and Laniidæ (Titmice and Shrikes) ; and *Certhiomorphæ* (Creepers and Nuthatches). By Hans Gadow, M.A., Ph.D. Pp. xiii., 386. Woodcuts and 9 coloured Plates. [With Systematic and Alphabetical Indexes.] 1883, 8vo. 17*s.*

Vol. X. Catalogue of the Passeriformes, or Perching Birds, in the Collection of the British Museum. *Fringilliformes* : Part I., containing the families Dicæidæ, Hirundinidæ, Ampelidæ, Mniotiltidæ, and Motacillidæ. By R. Bowdler Sharpe. Pp. xiii., 682. Woodcuts and 12 coloured Plates. [With Systematic and Alphabetical Indexes.] 1885, 8vo. 1*l.* 2*s.*

Vol. XI. Catalogue of the Passeriformes, or Perching Birds, in the Collection of the British Museum. *Fringilliformes* : Part II., containing the families Cœrebidæ, Tanagridæ, and Icteridæ. By Philip Lutley Sclater, M.A., F.R.S. Pp. xvii., 431. Woodcuts and 18 coloured Plates. [With Systematic and Alphabetical Indexes.] 1886, 8vo. 1*l.*

Vol. XII. Catalogue of the Passeriformes, or Perching Birds, in the Collection of the British Museum. *Fringilliformes* : Part III., containing the family Fringillidæ. By R. Bowdler Sharpe. Pp. xv., 871. Woodcuts and 16 coloured Plates. [With Systematic and Alphabetical Indexes.] 1888, 8vo. 1*l.* 8*s.*

Vol. XIII. Catalogue of the Passeriformes, or Perching Birds, in the Collection of the British Museum. *Sturniformes*, containing the families Artamidæ,

Catalogue of the Birds in the British Museum—*continued.*

Sturnidæ, Ploceidæ, and Alaudidæ. Also the families Atrichiidæ and Menuridæ. By R. Bowdler Sharpe. Pp. xvi., 701. Woodcuts and 15 coloured Plates. [With Systematic and Alphabetical Indexes.] 1890, 8vo. 1*l.* 8*s.*

Vol. XIV. Catalogue of the Passeriformes, or Perching Birds, in the Collection of the British Museum. *Oligomyodæ*, or the families Tyrannidæ, Oxyrhamphidæ, Pipridæ, Cotingidæ, Phytotomidæ, Philepittidæ, Pittidæ, Xenicidæ, and Eurylæmidæ. By Philip Lutley Sclater, M.A., F.R.S. Pp. xix., 494. Woodcuts and 26 coloured Plates. [With Systematic and Alphabetical Indexes.] 1888, 8vo. 1*l.* 4*s.*

Vol. XV. Catalogue of the Passeriformes, or Perching Birds, in the Collection of the British Museum. *Tracheophonæ*, or the families Dendrocolaptidæ, Formicariidæ, Conopophagidæ, and Pteroptochidæ. By Philip Lutley Sclater, M.A., F.R.S. Pp. xvii., 371. Woodcuts and 20 coloured Plates. [With Systematic and Alphabetical Indexes.] 1890, 8vo. 1*l.*

Vol. XVI. Catalogue of the Picariæ in the Collection of the British Museum. *Upupæ* and *Trochili*, by Osbert Salvin. *Coraciæ*, of the families Cypselidæ, Caprimulgidæ, Podargidæ, and Steatornithidæ, by Ernst Hartert. Pp. xvi., 703. Woodcuts and 14 coloured Plates. [With Systematic and Alphabetical Indexes.] 1892, 8vo. 1*l.* 16*s.*

Vol. XVII. Catalogue of the Picariæ in the Collection of the British Museum. *Coraciæ* (contin.) and *Halcyones*, with the families Leptosomatidæ, Coraciidæ, Meropidæ, Alcedinidæ, Momotidæ, Totidæ and Coliidæ, by R. Bowdler Sharpe. *Bucerotes* and *Trogones*, by W. R. Ogilvie Grant. Pp. xi., 522. Woodcuts and 17 coloured Plates. [With Systematic and Alphabetical Indexes.] 1892, 8vo. 1*l.* 10*s.*

Vol. XVIII. Catalogue of the Picariæ in the Collection of the British Museum. *Scansores*, containing the family Picidæ. By Edward Hargitt. Pp. xv., 597. Woodcuts and 15 coloured Plates. [With Systematic and Alphabetical Indexes.] 1890, 8vo. 1*l.* 6*s.*

Vol. XIX. Catalogue of the Picariæ in the Collection of the British Museum. *Scansores* and *Coccyges*: containing the families Rhamphastidæ, Galbulidæ, and Bucconidæ, by P. L. Sclater; and the families Indicatoridæ, Capitonidæ, Cuculidæ, and Musophagidæ, by G. E. Shelley. Pp. xii., 484: 13 coloured Plates. [With Systematic and Alphabetical Indexes.] 1891, 8vo. 1*l.* 5*s.*

Catalogue of the Birds in the British Museum—*continued.*

Vol. XX. Catalogue of the Psittaci, or Parrots, in the Collection of the British Museum. By T. Salvadori. Pp. xvii., 658. Woodcuts and 18 coloured Plates. [With Systematic and Alphabetical Indexes.] 1891. 8vo. 1*l.* 10*s.*

Vol. XXI. Catalogue of the Columbæ, or Pigeons, in the Collection of the British Museum. By T. Salvadorf Pp. xvii., 676. 15 coloured Plates. [With Systematic and Alphabetical Indexes.] 1893, 8vo. 1*l.* 10*s.*

Vol. XXII. Catalogue of the Game Birds (*Pterocletes, Gallinæ, Opisthocomi, Hemipodii*) in the Collection of the British Museum. By W. R. Ogilvie Grant. Pp. xvi., 585. 8 coloured Plates. [With Systematic and Alphabetical Indexes.] 1893, 8vo. 1*l.* 6*s.*

Vol. XXIII. Catalogue of the Fulicariæ (Rallidæ and Heliornithidæ) and Alectorides (Aramidæ, Eurypygidæ, Mesitidæ, Rhinochetidæ, Gruidæ, Psophiidæ, and Otididæ) in the Collection of the British Museum. By R. Bowdler Sharpe. Pp. xiii., 353. 9 coloured Plates. [With Systematic and Alphabetical Indexes.] 1894, 8vo. 20*s.*

Vol. XXIV. Catalogue of the Limicolæ in the Collection of the British Museum. By R. Bowdler Sharpe. Pp. xii., 794. Woodcuts and 7 coloured Plates. [With Systematic and Alphabetical Indexes.] 1896, 8vo. 1*l.* 5*s.*

Vol. XXV. Catalogue of the Gaviæ and Tubinares in the Collection of the British Museum. Gaviæ (Terns, Gulls, and Skuas), by Howard Saunders. Tubinares (Petrels and Albatrosses), by Osbert Salvin. Pp. xv., 475. Woodcuts and 8 coloured Plates. [With Systematic and Alphabetical Indexes.] 1896, 8vo. 1*l.* 1*s.*

Vol. XXVI. Catalogue of the Plataleæ, Herodiones, Steganopodes, Pygopodes, Alcæ, and Impennes in the Collection of the British Museum. Plataleæ (Ibises and Spoonbills) and Herodiones (Herons and Storks), by R. Bowdler Sharpe. Steganopodes (Cormorants, Gannets, Frigate-birds, Tropic-birds, and Pelicans), Pygopodes (Divers and Grebes), Alcæ (Auks), and Impennes (Penguins), by W. R. Ogilvie-Grant. Pp. xvii., 687. Woodcuts and 14 coloured Plates. [With Systematic and Alphabetical Indexes.] 1898, 8vo. 1*l.* 5*s.*

Vol. XXVII. Catalogue of the Chenomorphæ (Palamedeæ, Phoenicopteri, Anseres), Crypturi, and Ratitæ in the Collection of the British Museum. By T. Salvadori. Pp. xv., 636. 19 coloured Plates. [With Systematic and Alphabetical Indexes.] 1895, 8vo. 1*l.* 12*s.*

A Hand-list of the Genera and Species of Birds. [Nomenclator Avium tum Fossilium tum Viventium.] By R. Bowdler Sharpe, LL.D. :—

Vol. I. Pp. xxi., 303. [With Systematic Index.] 1899, 8vo. 10*s.*

Vol. II. Pp. xv., 312. [With Systematic Index, and an Alphabetical Index to Vols. I. and II.] 1900, 8vo. 10*s.*

Vol. III. Pp. xii., 367. [With Systematic and Alphabetical Indexes.] 1901, 8vo. 10*s.*

Vol. IV. Pp. xii., 391. [With Systematic and Alphabetical Indexes.] 1903, 8vo. 10*s.*

List of the Specimens of Birds in the Collection of the British Museum. By George Robert Gray :—

Part III., Sections III. and IV. Capitonidæ and Picidæ. Pp. 137. [With Index.] 1868, 12mo. 1*s.* 6*d.*

Part IV. Columbæ. Pp. 73. [With Index.] 1856, 12mo. 1*s.* 9*d.*

Part V. Gallinæ. Pp. iv., 120. [With an Alphabetical Index.] 1867, 12mo. 1*s.* 6*d.*

Catalogue of the Birds of the Tropical Islands of the Pacific Ocean in the Collection of the British Museum. By George Robert Gray, F.L.S., &c. Pp. 72. [With an Alphabetical Index.] 1859, 8vo. 1*s.* 6*d.*

Catalogue of the Collection of Birds' Eggs in the British Museum (Natural History) :—

Vol. I. Ratitæ. Carinatæ (Tinamiformes—Lariformes). By Eugene W. Oates. Pp. xxiii., 252. 18 Coloured Plates. [With Systematic and Alphabetical Indexes.] 1901, 8vo. 30*s.*

Vol. II. Carinatæ (Charadriiformes—Strigiformes). By Eugene W. Oates. Pp. xx., 400. 15 Coloured Plates. [With Systematic and Alphabetical Indexes.] 1902, 8vo. 30*s.*

Vol. III. Carinatæ (Psittaciformes — Passeriformes). By Eugene W. Oates and Capt. Savile G. Reid. Pp. xxiii., 349. 10 Coloured Plates. [With Systematic and Alphabetical Indexes.] 1903, 8vo. 25*s.*

Vol. IV. Carinatæ (Passeriformes continued). By Eugene W. Oates, assisted by Capt. Savile G. Reid. Pp. xviii., 352. 14 Coloured Plates. [With Systematic and Alphabetical Indexes.] 1905, 8vo. 30*s.*

REPTILES.

Catalogue of the Tortoises, Crocodiles, and Amphisbænians in the Collection of the British Museum. By Dr. J. E. Gray, F.R.S., &c. Pp. viii., 80. [With an Alphabetical Index.] 1844, 12mo. 1*s.*

Catalogue of Shield Reptiles in the Collection of the British Museum. By John Edward Gray, F.R.S., &c.:—

Appendix. Pp. 28. 1872, 4to. 2*s.* 6*d.*

Part II. Emydosaurians, Rhynchocephalia, and Amphisbænians. Pp. vi., 41. 25 Woodcuts. 1872, 4to. 3*s.* 6*d.*

Hand-List of the Specimens of Shield Reptiles in the British Museum. By Dr. J. E. Gray, F.R.S., F.L.S., &c. Pp. iv., 124. [With an Alphabetical Index.] 1873, 8vo. 4*s.*

Catalogue of the Chelonians, Rhynchocephalians, and Crocodiles in the British Museum (Natural History). New Edition. By George Albert Boulenger. Pp. x., 311. 73 Woodcuts and 6 Plates. [With Systematic and Alphabetical Indexes.] 1889, 8vo. 15*s.*

Catalogue of the Lizards in the British Museum (Natural History). Second Edition. By George Albert Boulenger :—

Vol. I. Geckonidæ, Eublepharidæ, Uroplatidæ, Pygopodidæ, Agamidæ. Pp. xii., 436. 32 Plates. [With Systematic and Alphabetical Indexes.] 1885, 8vo. 20*s.*

Vol. II. Iguanidæ, Xenosauridæ, Zonuridæ, Anguidæ Anniellidæ, Helodermatidæ, Varanidæ, Xantusiidæ Teiidæ, Amphisbænidæ. Pp. xiii., 497. 24 Plates [With Systematic and Alphabetical Indexes.] 1885, 8vo. 20*s.*

Vol. III. Lacertidæ, Gerrhosauridæ, Scincidæ, Anelytropidæ, Dibamidæ, Chamæleontidæ. Pp. xii., 575. 40 Plates. [With a Systematic Index and an Alphabetical Index to the three volumes.] 1887, 8vo. 1*l.* 6*s.*

Catalogue of the Snakes in the British Museum (Natural History). By George Albert Boulenger, F.R.S., &c. :—

Vol. I., containing the families Typhlopidæ, Glauconiidæ, Boidæ, Ilysiidæ, Uropeltidæ, Xenopeltidæ, and Colubridæ aglyphæ (part). Pp. xiii., 448 : 26 Woodcuts and 28 Plates. [With Systematic and Alphabetical Indexes.] 1893, 8vo. 1*l.* 1*s.*

Catalogue of the Snakes in the British Museum—*continued.*

Vol. II., containing the conclusion of the Colubridæ aglyphæ. Pp. xi., 382 : 25 Woodcuts and 20 Plates. [With Systematic and Alphabetical Indexes.] 1894, 8vo. 17*s.* 6*d.*

Vol. III., containing the Colubridæ (Opisthoglyphæ and Proteroglyphæ), Amblycephalidæ, and Viperidæ. Pp. xiv., 727 : 37 Woodcuts and 25 Plates. [With Systematic Index, and Alphabetical Index to the 3 volumes.] 1896, 8vo. 1*l.* 6*s.*

Catalogue of Colubrine Snakes in the Collection of the British Museum. By Dr. Albert Günther. Pp. xvi., 281. [With Geographic, Systematic, and Alphabetical Indexes.] 1858, 12mo. 4*s.*

BATRACHIANS.

Catalogue of the Batrachia Salientia in the Collection of the British Museum. By Dr. Albert Günther. Pp. xvi., 160. 12 Plates. [With Systematic, Geographic, and Alphabetical Indexes.] 1858, 8vo. 6*s.*

FISHES.

Catalogue of the Fishes in the British Museum. Second edition. Vol. I. Catalogue of the Perciform Fishes in the British Museum. Vol. I. Containing the Centrarchidæ, Percidæ, and Serranidæ (part). By George Albert Boulenger, F.R.S. Pp. xix., 394. Woodcuts and 15 Plates. [With Systematic and Alphabetical Indexes.] 1895, 8vo. 15*s.*

Catalogue of Fish collected and described by Laurence Theodore Gronow, now in the British Museum. Pp. vii., 196. [With a Systematic Index.] 1854, 12mo. 3*s.* 6*d.*

Catalogue of Lophobranchiate Fish in the Collection of the British Museum. By J. J. Kaup, Ph.D., &c. Pp. iv., 80. 4 Plates. [With an Alphabetical Index.] 1856, 12mo. 2*s.*

MOLLUSCA.

Guide to the Systematic Distribution of Mollusca in the British Museum. Part I. By John Edward Gray, Ph.D., F.R.S., &c. Pp. xii., 230. 121 Woodcuts. 1857, 8vo. 5*s.*

Catalogue of the Collection of Mazatlan Shells in the British Museum, collected by Frederick Reigen. Described by Philip P. Carpenter. Pp. xvi., 552. 1857, 12mo. 8*s.*

Catalogue of Pulmonata, or Air Breathing Mollusca, in the Collection of the British Museum. Part I. By Dr. Louis Pfeiffer. Pp. iv., 192. Woodcuts. 1855, 12mo. 2*s.* 6*d.*

Catalogue of the Auriculidæ, Proserpinidæ, and Truncatellidæ in the Collection of the British Museum. By Dr. Louis Pfeiffer. Pp. iv., 150. Woodcuts. 1857, 12mo. 1*s.* 9*d.*

List of the Mollusca in the Collection of the British Museum. By John Edward Gray, Ph.D., F.R.S., &c. :—

Part II. Olividæ. Pp. 41. 1865, 12mo. 1*s.*

Catalogue of the Conchifera, or Bivalve Shells, in the Collection of the British Museum. By M. Deshayes :—

Part I. Veneridæ, Cyprinidæ, Glauconomidæ, and Petricoladæ. Pp. iv., 216. 1853, 12mo. 3*s.*

Part II. Petricoladæ (concluded); Corbiculadæ. Pp. 217–292. [With an Alphabetical Index to the two parts.] 1854, 12mo. 6*d.*

BRACHIOPODA.

Catalogue of Brachiopoda Ancylopoda or Lamp Shells in the Collection of the British Museum. [*Issued as* "Catalogue of the Mollusca, Part IV."] Pp. iv., 128. 25 Woodcuts. [With an Alphabetical Index.] 1853, 12mo. 3*s.*

POLYZOA.

Catalogue of Marine Polyzoa in the Collection of the British Museum. Part III. Cyclostomata. By George Busk, F.R.S. Pp. viii., 39. 38 Plates. [With a Systematic Index.] 1875, 8vo. 5*s.*

CRUSTACEA.

Catalogue of the Specimens of Amphipodous Crustacea in the Collection of the British Museum. By C. Spence Bate, F.R.S., &c. Pp. iv., 399. 58 Plates. [With an Alphabetical Index.] 1862, 8vo. 1*l.* 5*s.*

ARACHNIDA.

Descriptive Catalogue of the Spiders of Burma, based upon the Collection made by Eugene W. Oates and preserved in the British Museum. By T. Thorell. Pp. xxxvi., 406. [With Systematic List and Alphabetical Index.] 1895, 8vo. 10*s.* 6*d.*

INSECTS.

Coleopterous Insects.

Nomenclature of Coleopterous Insects in the Collection of the British Museum :—

Part VII. Longicornia, I. By Adam White. Pp. iv., 174. 4 Plates. 1853, 12mo. 2*s.* 6*d.*

Part VIII. Longicornia, II. By Adam White. Pp. 237. 6 Plates. 1855, 12mo. 3*s.* 6*d.*

Illustrations of Typical Specimens of Coleoptera in the Collection of the British Museum. Part I. Lycidæ. By Charles Owen Waterhouse. Pp. x., 83. 18 Coloured Plates. [With Systematic and Alphabetical Indexes.] 1879, 8vo. 16*s.*

Catalogue of the Coleopterous Insects of Madeira in the Collection of the British Museum. By T. Vernon Wollaston, M.A., F.L.S. Pp. xvi., 234 : 1 Plate. [With a Topographical Catalogue and an Alphabetical Index.] 1857, 8vo. 3*s.*

Catalogue of the Coleopterous Insects of the Canaries in the Collection of the British Museum. By T. Vernon Wollaston, M.A., F.L.S. Pp. xiii., 648. [With Topographical and Alphabetical Indexes.] 1864, 8vo. 10*s.* 6*d.*

Catalogue of Halticidæ in the Collection of the British Museum. By the Rev. Hamlet Clark, M.A., F.L.S. Physapodes and Œdipodes. Part I. Pp. xii., 301. Frontispiece and 9 Plates. 1860, 8vo. 7*s.*

Catalogue of Hispidæ in the Collection of the British Museum. By Joseph S. Baly, M.E.S., &c. Part I. Pp. x., 172. 9 Plates. [With an Alphabetical Index.] 1858, 8vo. 6*s.*

Hymenopterous Insects.

Catalogue of Hymenopterous Insects in the Collection of the British Museum. By Frederick Smith. 12mo. :—

Part I. Andrenidæ and Apidæ. Pp. 197. 6 Plates. 1853, 2*s.* 6*d.*

Catalogue of Hymenopterous Insects in the British Museum—*continued.*

Part II. Apidæ. Pp. 199–465. 6 Plates. [With an Alphabetical Index.] 1854. 6*s.*

Part III. Mutillidæ and Pompilidæ. Pp. 206. 6 Plates. 1855. 6*s.*

Part IV. Sphegidæ, Larridæ, and Crabronidæ. Pp. 207–497. 6 Plates. [With an Alphabetical Index.] 1856. 6*s.*

Part V. Vespidæ. Pp. 147. 6 Plates. [With an Alphabetical Index.] 1857. 6*s.*

Part VI. Formicidæ. Pp. 216. 14 Plates. [With an Alphabetical Index.] 1858. 6*s.*

Part VII. Dorylidæ and Thynnidæ. Pp. 76. 3 Plates. [With an Alphabetical Index.] 1859. 2*s.*

List of Hymenoptera, with descriptions and figures of the Typical Specimens in the British Museum. Vol. I., Tenthredinidæ and Siricidæ. By W. F. Kirby. Pp. xxviii., 450. 16 Coloured Plates. [With Systematic and Alphabetical Indexes.] 1882, 8vo. 1*l.* 18*s.*

Dipterous Insects.

A Monograph of the Culicidæ, or Mosquitoes. Mainly compiled from the Collections received at the British Museum from various parts of the world in connection with the Investigation into the cause of Malaria conducted by the Colonial Office and the Royal Society. By Fred. V. Theobald, M.A., &c.:—

Vol. III. Pp. xvii., 359 : 17 plates, 1 diagram, and 193 illustrations in text. 1903, 8vo. 1*l.* 1*s.*

Vol. IV. Pp. xix., 639 : 16 plates and 297 text-figures. [With Index.] 1907, 8vo. 1*l.* 12*s.* 6*d.*

A Monograph of the Tsetse-Flies (Genus Glossina, Westwood), based on the Collection in the British Museum. By Ernest Edward Austen. With a chapter on Mouth-parts by H. J. Hansen, Phil. Doc. Pp. ix., 319 : 9 plates (7 coloured), 16 woodcuts, 1 map. 1903, Roy. 8vo. 15*s.*

Lepidopterous Insects.

Catalogue of the Lepidoptera Phalænæ in the British Museum. By Sir George F. Hampson, Bart. :—

Vol. I. Catalogue of the Syntomidæ in the Collection of the British Museum. Pp. xxi., 559 : 285 woodcuts. [With Systematic and Alphabetical Indexes.] 1898, 8vo. 15*s.*

——Atlas of 17 Coloured Plates, 8vo. 15*s.*

Vol. II. Catalogue of the Arctiadæ (Nolinæ, Lithosianæ) in the Collection of the British Museum. Pp. xx., 589 : 411 woodcuts. [With Systematic and Alphabetical Indexes.] 1900, 8vo. 18*s.*

——Atlas of 18 Coloured Plates (xviii.–xxxv.), 8vo. 15*s.*

Vol. III. Catalogue of the Arctiadæ (Arctianæ) and Agaristidæ in the Collection of the British Museum. Pp. xix., 690 : 294 woodcuts. [With Systematic and Alphabetical Indexes.] 1901, 8vo. 15*s.*

——Atlas of 19 Coloured Plates (xxxvi–liv.), 8vo. 16*s.*

Vol. IV. Catalogue of the Noctuidæ [Agrotinæ]. Pp. xx., 689 : 125 woodcuts. [With Systematic and Alphabetical Indexes.] 1903, 8vo. 15*s.*

——Atlas of 23 Coloured Plates (lv.—lxxvii), 8vo. 16*s.*

Vol. V. Catalogue of the Noctuidæ [Hadeninæ]. Pp. xvi., 634 : 172 woodcuts. [With Systematic and Alphabetical Indexes.] 1905, 8vo. 15*s.*

——Atlas of 18 Coloured Plates (lxxviii.–xcv.), 8vo. 15*s.*

Vol. VI. Catalogue of the Noctuidæ [Cucullianæ]. Pp. xiv., 532 : 172 woodcuts. [With Systematic and Alphabetical Indexes.] 1906, 8vo. 15*s.*

——Atlas of 12 Coloured Plates (xcvi.–cvii.), 8vo. 10*s.*

Illustrations of Typical Specimens of Lepidoptera Heterocera in the Collection of the British Museum :—

Part V. By Arthur Gardiner Butler. Pp. xii., 74. 78–100 Coloured Plates. [With a Systematic Index.] 1881, 4to. 2*l.* 10*s.*

Part VI. By Arthur Gardiner Butler. Pp. xv., 89. 101–120 Coloured Plates. [With a Systematic Index.] 1886, 4to. 2*l.* 4*s.*

Part VII. By Arthur Gardiner Butler. Pp. iv., 124. 121–138 Coloured Plates. [With a Systematic List.] 1889, 4to. 2*l.*

Part VIII. The Lepidoptera Heterocera of the Nilgiri District. By George Francis Hampson. Pp. iv., 144. 139–156 Coloured Plates. [With a Systematic List.] 1891, 4to. 2*l.*

Illustrations of Typical Specimens of Lepidopteræ Heterocera in the Collection of the British Museum—*continued.*

Part IX. The Macrolepidoptera Heterocera of Ceylon. By George Francis Hampson. Pp. v., 182. 157–176 Coloured Plates. [With a General Systematic List of Species collected in, or recorded from, Ceylon.] 1893 4to. 2*l.* 2*s.*

Catalogue of the Collection of Palæarctic Butterflies formed by the late John Henry Leech, and presented to the Trustees of the British Museum by his Mother, Mrs. Eliza Leech. By Richard South, F.E.S. Pp. vi., 228. 2 Coloured Plates. With a Portrait and Biographical Memoir of Mr. Leech. 1902, 4to. 1*l.*

Catalogue of Diurnal Lepidoptera described by Fabricius in the Collection of the British Museum. By Arthur Gardiner Butler, F.L.S., &c. Pp. iv., 303. 3 Plates. 1869, 8vo. 7*s.* 6*d.*

List of the Specimens of Lepidopterous Insects in the Collection of the British Museum. By Francis Walker. 12mo. :—

Part XXIII. Geometrites. Pp. 756–1020. 1861. 3*s.* 6*d.*
Part XXV. ———— Pp. 1281–1477. 1862. 3*s.*
Part XXVI. ———— Pp. 1478–1796. [With an Alphabetical Index to Parts XX.–XXVI.] 1862. 4*s.* 6*d.*
Part XXVII. Crambites and Tortricites. Pp. 1–286. 1863. 4*s.*
Part XXVIII. Tortricites and Tineites. Pp. 287–561. 1863. 4*s.*
Part XXIX. Tineites. Pp. 562–835. 1864. 4*s.*
Part XXX. ———— Pp. 836–1096. [With an Alphabetical Index to Parts XXVII.–XXX.] 1864. 4*s.*
Part XXXI. Supplement. Pp. 1–321. 1864. 5*s.*
Part XXXII. ———— Part 2. Pp. 322–706. 1865. 5*s.*
Part XXXIII. ———— Part 3. Pp. 707–1120. 1865. 6*s.*
Part XXXIV. ———— Part 4. Pp. 1121–1533. 1865. 5*s.* 6*d.*
Part XXXV. ———— Part 5. Pp. 1534–2040. [With an Alphabetical Index to Parts XXXI.–XXXV.] 1866. 7*s.*

Neuropterous Insects.

Catalogue of the Specimens of Neuropterous Insects in the Collection of the British Museum. By Dr. H. Hagen. Part I. Termitina. Pp. 34. 1858, 12mo. 6*d.*

Orthopterous Insects.

Catalogue of Orthopterous Insects in the Collection of the British Museum. Part I. Phasmidæ. By John Obadiah Westwood, F.L.S., &c. Pp. 195. 48 Plates. [With an Alphabetical Index.] 1859, 4to. 3*l.*

Catalogue of the Specimens of Blattariæ in the Collection of the British Museum. By Francis Walker, F.L.S., &c. Pp. 239. [With an Alphabetical Index.] 1868, 8vo. 5*s.* 6*d.*

Catalogue of the Specimens of Dermaptera Saltatoria in the Collection of the British Museum. By Francis Walker, F.L.S., &c. :—

Part II. Locustidæ (continued). Pp. 225–423 [With an Alphabetical Index.] 1869, 8vo. 4*s.* 6*d.*

Part III. Locustidæ (continued).—Acrididæ. Pp. 425–604. [With an Alphabetical Index.] 1870, 8vo. 4*s.*

Part IV. Acrididæ (continued). Pp. 605–809. [With an Alphabetical Index.] 1870, 8vo. 6*s.*

Part V. Tettigidæ.—Supplement to the Catalogue of Blattariæ.—Supplement to the Catalogue of Dermaptera Saltatoria (with remarks on the Geographical Distribution of Dermaptera). Pp. 811–850; 43; 116. [With Alphabetical Indexes.] 1870, 8vo. 6*s.*

Synonymic Catalogue of Orthoptera. By W. F. Kirby :—

Vol. I. Orthoptera Euplexoptera, Cursoria, et Gressoria. (Forficulidæ, Hemimeridæ, Blattidæ, Mantidæ, Phasmidæ.) Pp. x., 501. [With Index.] 1904, 8vo. 10*s.*

Vol. II. Orthoptera Saltatoria. Part I. (Achetidæ et Phasgonuridæ.) Pp. viii., 562. [With Index.] 1906, 8vo. 15*s.*

Hemipterous Insects.

Catalogue of the Specimens of Heteropterous Hemiptera in the Collection of the British Museum. By Francis Walker, F.L.S., &c. 8vo. :—

Part IV. Pp. 211. [With Alphabetical Index.] 1871. 6*s.*

Part V. Pp. 202. [With Alphabetical Index.] 1872. 5*s.*

Part VI. Pp. 210. [With Alphabetical Index.] 1873. 5*s.*

Part VII. Pp. 213. [With Alphabetical Index.] 1873. 6*s.*

Part VIII. Pp. 220. [With Alphabetical Index.] 1873. [6*s.* 6*d.*

Homopterous Insects.

A Synonymic Catalogue of Homoptera. Part I. Cicadidæ. By W. L. Distant. Pp. 207. [Index.] 1906, 8vo. 5*s.*

VERMES.

Catalogue of the Species of Entozoa, or Intestinal Worms, contained in the Collection of the British Museum. By Dr. Baird. Pp. iv., 132. 2 Plates. [With an Index of the Animals in which the Entozoa mentioned in the Catalogue are found, and an Index of Genera and Species.] 1853, 12mo. 2*s.*

ANTHOZOA.

Catalogue of Sea-pens or Pennatulariidæ in the Collection of the British Museum. By J. E. Gray, F.R.S., &c. Pp. iv., 40. 2 Woodcuts. 1870, 8vo. 1*s.* 6*d.*

Catalogue of Lithophytes or Stony Corals in the Collection of the British Museum. By J. E. Gray, F.R.S., &c. Pp. iv., 51. 14 Woodcuts. 1870, 8vo. 3*s.*

Catalogue of the Madreporarian Corals in the British Museum (Natural History) :—

Vol. I. The Genus Madrepora. By George Brook. Pp. xi., 212. 35 Collotype Plates. [With Systematic and Alphabetical Indexes, and Explanation of the Plates.] 1893, 4to. 1*l.* 4*s.*

Vol. II. The Genus Turbinaria; the Genus Astræopora. By Henry M. Bernard, M.A. Cantab., F.L.S., F.Z.S. Pp. iv., 106. 30 Collotype and 3 Lithographic Plates. [With Index of Generic and Specific Names, and Explanation of the Plates.] 1896, 4to. 18*s.*

Vol. III. The Genus Montipora; the Genus Anacropora. By Henry M. Bernard, M.A., &c. Pp. vii., 192. 30 Collotype and 4 Lithographic Plates. [With Systematic Index, Index of Generic and Specific Names, and Explanation of the Plates.] 1897, 4to. 1*l.* 4*s.*

Vol. IV. The Family Poritidæ. I.—The Genus Goniopora. By Henry M. Bernard, M.A. Pp. viii., 206. 12 Collotype and 4 Lithographic Plates. [With Index of Generic and Specific Names, and Explanation of the Plates.] 1903, 4to. 1*l.*

Vol. V. The Family Poritidæ. II.—The Genus Porites. Part I.—Porites of the Indo-Pacific Region. By Henry M. Bernard, M.A. Pp. vi., 303. 35 Plates. [With Index of Generic and Specific Names, and Explanation of the Plates.] 1905, 4to. £1 15*s.*

Catalogue of the Madreporarian Corals in the British Museum—*continued.*

Vol. VI. The Family Poritidæ. II.—The Genus Porites. Part II.—Porites of the Atlantic and West Indies, with the European Fossil Forms. The Genus Goniopora, a supplement to Vol. IV. By Henry M. Bernard, M.A. Pp. vi., 173. 16 Collotype and 1 Lithographic Plates. [With Index of Generic and Specific Names, and Explanation of the Plates.] 1906, 4to. £1.

BRITISH ANIMALS.

Catalogue of British Birds in the Collection of the British Museum. By George Robert Gray, F.L.S., F.Z.S., &c. Pp. xii., 248. [With a List of Species.] 1863, 8vo. 3*s.* 6*d.*

Catalogue of British Hymenoptera in the Collection of the British Museum. Second edition. Part I. Andrenidæ and Apidæ. By Frederick Smith, M.E.S. New Issue. Pp. xi., 236. 11 Plates. [With Systematic and Alphabetical Index.] 1891, 8vo. 6*s.*

Catalogue of British Fossorial Hymenoptera, Formicidæ, and Vespidæ in the Collection of the British Museum. By Frederick Smith, V.P.E.S. Pp. 236. 6 Plates. [With an Alphabetical Index.] 1858, 12mo. 6*s.*

Illustrations of British Blood-sucking Flies, with notes by Ernest Edward Austen, Assistant, Department of Zoology British Museum (N.H.). Pp. 74. 34 Coloured Plates. 1906, roy. 8vo. £1 5*s.*

A Catalogue of the British Non-parasitical Worms in the Collection of the British Museum. By George Johnston, M.D., Edin., F.R.C.L., Ed., LL.D., Marischal Coll., Aberdeen, &c. Pp. 365. Woodcuts and 24 Plates. [With an Alphabetical Index.] 1865, 8vo. 7*s.*

Catalogue of the British Echinoderms in the British Museum (Natural History). By F. Jeffrey Bell, M.A. Pp. xvii., 202. Woodcuts and 16 Plates (2 Coloured). [With Table of Contents, Tables of Distribution, Alphabetical Index, Description of the Plates, &c.] 1892, 8vo. 12*s.* 6*d.*

List of the Specimens of British Animals in the Collection of the British Museum; with Synonyma and References to figures. 12mo.:—

Part V. Lepidoptera. By J. F. Stephens. 2nd Edition. Revised by H. T. Stainton and E. Shepherd. Pp. iv., 224. 1856. 1*s.* 9*d.*

Part VI. Hymenoptera. By F. Smith. Pp. 134. 1851. 2*s.*

List of the Specimens of British Animals in the Collection of the British Museum—*continued.*

Part VII. Mollusca, Acephala and Brachiopoda. By Dr. J. E. Gray. Pp. iv., 167. 1851. 3*s.* 6*d.*

Part VIII. Fish. By Adam White. Pp. xxiii., 164. (With Index and List of Donors.) 1851. 3*s.* 6*d.*

Part IX. Eggs of British Birds. By George Robert Gray. Pp. 143. 1852. 2*s.* 6*d.*

Part XI. Anoplura, or Parasitic Insects. By H. Denny. Pp. iv., 51. 1852. 1*s.*

Part XII. Lepidoptera (continued). By James F. Stephens. Pp. iv., 54. 1852. 9*d.*

Part XIII. Nomenclature of Hymenoptera. By Frederick Smith. Pp. iv., 74. 1853. 1*s.* 4*d.*

Part XIV. Nomenclature of Neuroptera. By Adam White. Pp. iv., 16. 1853. 6*d.*

Part XV. Nomenclature of Diptera, I. By Adam White. Pp. iv., 42. 1853. 1*s.*

Part XVI. Lepidoptera (completed). By H. T. Stainton. Pp. 199. [With an Index.] 1854. 3*s.*

PLANTS.

Illustrations of Australian Plants collected in 1770 during Captain Cook's Voyage round the World in H.M.S. "Endeavour." By the Right Hon. Sir Joseph Banks, Bart., K.B., P.R.S., and Dr. Daniel Solander, F.R.S. [Being a series of lithographic reproductions of copper-plates engraved after paintings by F. P. Nodder, James Miller, J. F. Miller, and John Cleveley.] With Introduction and Determinations by James Britten, F.L.S., Senior Assistant, Department of Botany, British Museum :—

Part I.—101 Plates, with 31 pages of descriptive text. 1900, fol. £1 5*s.*

Part II.—142 Plates (pls. 101–243), with 41 pages of descriptive text (pp. 35–75). 1901, fol. £1 15*s.*

Part III.—77 Plates (pls. 244–318, 45A, and 122), with 26 pages of descriptive text, including Index to the whole work (pp. 77–102), and 3 maps. 1905, fol. £1 5*s.*

Catalogue of the African Plants collected by Dr. Friedrich Welwitsch in 1853–61 :—

Vo . I. Dicotyledons. By William Philip Hiern, M.A., F.L.S., &c. :—

Part I. [Ranunculaceæ to Rhizophoraceæ.] Pp. xxvi., 336. [With Portrait of Dr. Welwitsch. Introduction, Bibliography, and Index of Genera.] 1896, 8vo. 7*s.* 6*d.*

Catalogue of the African Plants collected by Dr. Friedrich Welwitsch in 1853–61—*continued.*

Vol. I—*continued.*

Part II. Combretaceæ to Rubiaceæ. Pp. 337–510. [With Index of Genera.] 1898, 8vo. 4*s.*

Part III. Dipsaceæ to Scrophulariaceæ. Pp. 511–784. [With Index of Genera.] 1898, 8vo. 5*s.*

Part IV. Lentibulariaceæ to Ceratophylleæ. Pp. 785–1035. [With Index.] 1900, 8vo. 5*s.*

Vol. II. Monocotyledons, Gymnosperms, and Cryptogams :—

Part I. Monocotyledons and Gymnosperms. By Alfred Barton Rendle, M.A., D.Sc. F.L.S., Assistant, Department of Botany. Pp. 260. [With Index of Genera.] 1899, 8vo. 6*s.*

Part II. Cryptogamia. Pp. 261–566. [With Table of Errata, and General Index to the whole work.] 1901, 8vo. 6*s.*

Vascular Cryptogams	...	By William Carruthers, F.R.S.
Mosses	...	„ Antony Gepp, M.A., F.L.S.
Hepatics	...	„ F. Stephani.
Marine Algæ ...	...	„ Ethel S. Barton.
Freshwater Algæ ...	...	„ W. West, F.L.S., and G. S. West, B.A.
Diatomaceæ ...	...	„ Thomas Comber, F.L.S.
Lichenes	...	„ E. A. Wainio.
Fungi	...	„ Annie Lorrain Smith.
Mycetozoa ...	...	„ Arthur Lister, F.R.S.

Synopsis of the British Basidiomycetes : a Descriptive Catalogue of the Drawings and Specimens in the Department of Botany, British Museum. By Worthington George Smith, F.L.S. Pp. 531. 5 Plates and 145 Figures in Text. [With Index.] 1908, 8vo. 10*s.*

A Monograph of Lichens found in Britain : being a Descriptive Catalogue of the Species in the Herbarium of the British Museum. By the Rev. James M. Crombie, M.A., F.L.S., F.G.S., &c. Part I. Pp. viii., 519 : 74 Woodcuts. [With Glossary, Synopsis, Tabular Conspectus, and Index.] 1894, 8vo. 16*s.*

List of British Diatomaceæ in the Collection of the British Museum. By the Rev. W. Smith, F.L.S., &c. Pp. iv., 55. 1859, 12mo. 1*s.*

FOSSILS.

Catalogue of the Fossil Mammalia in the British Museum (Natural History). By Richard Lydekker, B.A., F.G.S.:—

Part I. Containing the Orders Primates, Chiroptera, Insectivora, Carnivora, and Rodentia. Pp. xxx., 268. 33 Woodcuts. [With Systematic and Alphabetical Indexes.] 1885, 8vo. 5*s.*

Part II. Containing the Order Ungulata, Suborder Artiodactyla. Pp. xxii., 324. 39 Woodcuts. [With Systematic and Alphabetical Indexes.] 1885, 8vo. 6*s.*

Part III. Containing the Order Ungulata, Suborders Perissodactyla, Toxodontia, Condylarthra, and Amblypoda. Pp. xvi., 186. 30 Woodcuts. [With Systematic Index, and Alphabetical Index of Genera and Species, including Synonyms.] 1886, 8vo. 4*s.*

Part IV. Containing the Order Ungulata, Suborder Proboscidea. Pp. xxiv., 235. 33 Woodcuts. [With Systematic Index, and Alphabetical Index of Genera and Species, including Synonyms.] 1886, 8vo. 5*s.*

Part V. Containing the Group Tillodontia, the Orders Sirenia, Cetacea, Edentata, Marsupialia, Monotremata, and Supplement. Pp. xxxv., 345. 55 Woodcuts. [With Systematic Index, and Alphabetical Index of Genera and Species, including Synonyms.] 1887, 8vo. 6*s.*

Catalogue of the Fossil Birds in the British Museum (Natural History). By Richard Lydekker, B.A. Pp. xxvii., 368. 75 Woodcuts. [With Systematic Index, and Alphabetical Index of Genera and Species, including Synonyms.] 1891, 8vo. 10*s.* 6*d.*

Catalogue of the Fossil Reptilia and Amphibia in the British Museum (Natural History). By Richard Lydekker, B.A., F.G.S.:—

Part I. Containing the Orders Ornithosauria, Crocodilia, Dinosauria, Squamata, Rhynchocephalia, and Proterosauria. Pp. xxviii., 309. 69 Woodcuts. [With Systematic Index, and Alphabetical Index of Genera and Species, including Synonyms.] 1888, 8vo. 7*s.* 6*d.*

Part II. Containing the Orders Ichthyopterygia and Sauropterygia. Pp. xxi., 307. 85 Woodcuts. [With Systematic Index, and Alphabetical Index of Genera and Species, including Synonyms.] 1889, 8vo. 7*s.* 6 *l.*

Part III. Containing the Order Chelonia. Pp. xviii., 239. 53 Woodcuts. [With Systematic Index, and Alphabetical Index of Genera and Species, including Synonyms.] 1889, 8vo. 7*s.* 6*d.*

Catalogue of the Fossil Reptilia and Amphibia in the British Museum—*continued.*

Part IV. Containing the Orders Anomodontia, Ecaudata, Caudata, and Labyrinthodontia; and Supplement. Pp. xxiii., 295. 66 Woodcuts. [With Systematic Index, Alphabetical Index of Genera and Species, including Synonyms, and Alphabetical Index of Genera and Species to the entire work.] 1890, 8vo. 7*s.* 6*d.*

Catalogue of the Fossil Fishes in the British Museum (Natural History). By Arthur Smith Woodward, LL.D., F.R.S., F.G.S., &c. :—

Part I. Containing the Elasmobranchii. Pp. xlvii., 474. 13 Woodcuts and 17 Plates. [With Alphabetical Index, and Systematic Index of Genera and Species.] 1889, 8vo. 21*s.*

Part II. Containing the Elasmobranchii (Acanthodii), Holocephali, Ichthyodorulites, Ostracodermi, Dipnoi, and Teleostomi (Crossopterygii and Chondrostean Actinopterygii). Pp. xliv., 567. 58 Woodcuts and 16 Plates. [With Alphabetical Index, and Systematic Index of Genera and Species.] 1891, 8vo. 21*s.*

Part III. Containing the Actinopterygian Teleostomi of the Orders Chondrostei (concluded), Protospondyli, Aetheospondyli, and Isospondyli (in part). Pp. xlii., 544. 45 Woodcuts and 18 Plates. [With Alphabetical Index, and Systematic Index of Genera and Species.] 1895, 8vo. 21*s.*

Part IV. Containing the Actinopterygian Teleostomi of the Suborders Isospondyli (in part), Ostariophysi, Apodes, Percesoces, Hemibranchii, Acanthopterygii, and Anacanthini. Pp. xxxix., 636. 22 Woodcuts and 19 Plates. [With Alphabetical Index, and Systematic Index of Genera and Species.] 1901, 8vo. 21*s.*

A descriptive Catalogue of the Tertiary Vertebrata of the Fayûm, Egypt. Based on the Collection of the Egyptian Government in the Geological Museum, Cairo, and on the Collection in the British Museum (Natural History), London. By C. W. Andrews, D.Sc. Pp. xxxvii., 324: 98 Text Figures and 26 Plates. [With Systematic and Alphabetical Indexes.] 1906, 4to. 1*l.* 15*s.*

Systematic List of the Edwards Collection of British Oligocene and Eocene Mollusca in the British Museum (Natural History), with references to the type-specimens from similar horizons contained in other collections belonging to the Geological Department of the Museum. By Richard Bullen Newton, F.G.S. Pp. xxviii., 365. [With table of Families and Genera, Bibliography, Correlation-table Appendix, and Alphabetical Index.] 1891, 8vo. 6*s.*

Catalogue of Tertiary Mollusca in the Department of Geology, British Museum (Natural History). Part I. The Australasian Tertiary Mollusca. By George F. Harris, F.G.S., &c. Pp. xxvi., 407. 8 Plates. [With Table of Families, Genera, and Sub-Genera, and Index.] 1897, 8vo. 10*s*.

Catalogue of the Fossil Cephalopoda in the British Museum (Natural History) :—

Part I. Containing part of the Suborder Nautiloidea, consisting of the families Orthoceratidæ, Endoceratidæ, Actinoceratidæ, Gomphoceratidæ, Ascoceratidæ, Poterioceratidæ, Cyrtoceratidæ, and Supplement. By Arthur H. Foord, F.G.S. Pp. xxxi., 344. 51 Woodcuts. [With Systematic Index, and Alphabetical Index of Genera and Species, including Synonyms.] 1888, 8vo. 10*s*. 6*d*.

Part II. Containing the remainder of the Suborder Nautiloidea, consisting of the families Lituitidæ, Trochoceratidæ, Nautilidæ, and Supplement. By Arthur H. Foord, F.G.S. Pp. xxviii., 407. 86 Woodcuts. [With Systematic Index, and Alphabetical Index of Genera and Species, including Synonyms.] 1891, 8vo. 15*s*.

Part III. Containing the Bactritidæ, and part of the Suborder Ammonoidea. By Arthur H. Foord, Ph.D., F.G.S., and George Charles Crick, A.R.S.M., F.G.S. Pp. xxxiii., 303. 146 Woodcuts. [With Systematic Index of Genera and Species, and Alphabetical Index.] 1897, 8vo. 12*s*. 6*d*.

List of the Types and Figured Specimens of Fossil Cephalopoda in the British Museum (Natural History). By G. C. Crick, F.G.S. Pp. 103. [With Index.] 1898, 8vo. 2*s*. 6*d*.

A Catalogue of British Fossil Crustacea, with their Synonyms and the Range in Time of each Genus and Order. By Henry Woodward, F.R.S. Pp. xii., 155. [With an Alphabetical Index.] 1877, 8vo. 5*s*.

Catalogue of the Fossil Bryozoa in the Department of Geology, British Museum (Natural History):—

The Jurassic Bryozoa. By J. W. Gregory, D.Sc., F.G.S., F.Z.S. Pp. [viii.,] 239 : 22 Woodcuts and 11 Plates. [With List of Species and Distribution, Bibliography, Index, and Explanation of Plates.] 1896, 8vo. 10*s*.

The Cretaceous Bryozoa. Vol. I. By J. W. Gregory, D.Sc., F.G.S., F.Z.S. Pp. xiv., 457 : 64 Woodcuts and 17 Plates. [With Index and Explanation of Plates.] 1899, 8vo. 16*s*.

Catalogue of the Blastoidea in the Geological Department of the British Museum (Natural History), with an account of the morphology and systematic position of the group, and a revision of the genera and species. By Robert Etheridge, jun., of the Department of Geology, British Museum (Natural History), and P. Herbert Carpenter, D.Sc., F.R.S., F.L.S. (of Eton College). Pp. xv., 322. 20 Plates. [With Preface by Dr. H. Woodward, Table of Contents, General Index, Explanations of the Plates, &c.] 1886 4to. 25*s.*

The Genera and Species of Blastoidea, with a List of the Specimens in the British Museum (Natural History). By F. A. Bather, M.A., F.G.S., of the Geological Department. Pp. x., 70. 1 Woodcut. 1899, 8vo. 3*s.*

Catalogue of the Palæozoic Plants in the Department of Geology and Palæontology, British Museum (Natural History). By Robert Kidston, F.G.S. Pp. viii., 288. [With a list of works quoted, and an Index.] 1886 8vo. 5*s.*

Catalogue of the Mesozoic Plants in the Department of Geology, British Museum (Natural History). By A. C. Seward, M.A., F.R.S., F.G.S., University Lecturer in Botany and Fellow of Emanuel College, Cambridge :—

Part I. The Wealden Flora. Part I. Thallophyta—Pteridophyta. Pp. xxxviii., 179. 17 Woodcuts and 11 Plates. [With Alphabetical Index, Explanations of the Plates, &c.] 1894, 8vo. 10*s.*

Part II. The Wealden Flora. Part II. Gymnospermæ. Pp. viii., 259. 9 Woodcuts and 20 Plates. [With Alphabetical Index, Explanations of the Plates, &c.] 1895, 8vo. 15*s.*

Part III. The Jurassic Flora. Part I. The Yorkshire Coast. Pp. xii., 341. 53 Woodcuts and 21 Plates. [With Alphabetical Index, Explanations of the Plates, &c.] 1900, 8vo. 20*s.*

Part IV. The Jurassic Flora. Part II. Liassic and Oolitic Floras of England (excluding the Inferior Oolite Plants of the Yorkshire Coast). Pp. xv., 192. 20 Woodcuts and 13 Plates. [With Alphabetical Index, Explanations of the Plates, &c.] 1904, 8vo. 10*s.*

Catalogue of the Fossil Plants of the Glossopteris Flora in the Department of Geology, British Museum (Natural History). Being a Monograph of the Permo-carboniferous Flora of India and the Southern Hemisphere. By E. A. Newell Arber, M.A., F.L.S., F.G.S. Pp. lxxiv., 255 : 51 Text Figures and 8 Plates. [With Bibliography and Alphabetical Index.] 1905, 8vo. 12*s.* 6*d.*

GUIDE-BOOKS, Etc.

A General Guide to the British Museum (Natural History), Cromwell Road, London, S.W. 11th Edition. With 58 woodcuts, 2 plans, 2 views of the building, and an illustrated cover. Pp. 125. 1906, 8vo. 3*d.*

Guide to the Specimens illustrating the Races of Mankind (Anthropology), exhibited in the Department of Zoology, British Museum (Natural History). [By R. Lydekker, F.R.S.] Illustrated by 16 Figures. Pp. 31. 1908, 8vo. 4*d.*

Guide to the Galleries of Mammals (other than Ungulates) in the Department of Zoology of the British Museum (Natural History). 8th Edition. Pp. 101. 52 Woodcuts and 4 plans. Index. 1906, 8vo. 6*d.*

Guide to the Great Game Animals (Ungulata) in the Department of Zoology, British Museum (Natural History). Pp. 93. 53 Text and other figures. With list of Horns, Antlers and Tusks, and Index. 1907, 8vo. 1*s.*

Guide to the Elephants (Recent and Fossil) exhibited in the Department of Geology and Palæontology in the British Museum (Natural History). [By Dr. C. W. Andrews, F.R.S.] Illustrated by 31 text-figures. Pp. 46. 1908, 8vo. 6*d.*

Guide to the Specimens of the Horse Family (Equidæ) exhibited in the Department of Zoology, British Museum (Natural History). [By R. Lydekker, F.R.S.] Pp. 42. 26 Figures. 1907, 8vo. 1*s.*

Guide to the Domesticated Animals (other than Horses) exhibited in the Central and North Halls of the British Museum (Natural History). [By R. Lydekker, F.R.S.] Illustrated by 24 Figures. Pp. 55. [With table of Contents, List of Illustrations, and Index.] 1908, 8vo. 6*d.*

Guide to the Gallery of Birds in the Department of Zoology of the British Museum (Natural History). [By W. R. Ogilvie Grant.] Pp. iv., 228. 24 Plates, and 7 Illustrations in text. With Index. 1905, roy. 8vo. 2*s.* 6*d.*

Guide to the Gallery of Birds in the Department of Zoology, British Museum (Natural History). Part I. General Series. [By W. R. Ogilvie Grant.] Pp. 149. With Index. 1905, roy. 8vo. 6*d.*

Guide to the Nesting Series of British Birds. Being Part II. of the Guide to the Gallery of Birds in the Department of Zoology, British Museum (Natural History). [By W. R. Ogilvie Grant.] Pp. 62. 4 Plates. Index. 1905, roy. 8vo. 4*d.*

Guide to the Gallery of Reptilia and Amphibia in the Department of Zoology of the British Museum (Natural History). [By R. Lydekker, F.R.S.] Illustrated by 76 text and other Figures. Pp. iv., 75. [With Table of Contents.] 1906, 8vo. 6*d.*

Guide to the Gallery of Fishes in the Department of Zoology of the British Museum (Natural History). [By Dr. W. G. Ridewood.] Illustrated by 96 Figures. Pp. v., 209. [With Preface by Sir E. Ray Lankester, Table of Classification, and Index.] 1908, 8vo. 1*s.*

Guide to the exhibited Series of Insects, Zoological Department (Insect Section), British Museum (Natural History). By C. O. Waterhouse. Pp. 57: 62 text and full-page Illustrations. [With Table of Contents and Index.] 1908, 8vo. 1*s.*

Guide to the Shell and Starfish Galleries (Mollusca, Polyzoa, Brachiopoda, Tunicata, Echinoderma, and Worms). Department of Zoology, British Museum (Natural History), Fifth Edition. Pp. iv., 133. 125 Woodcuts, Plan and Indexes. 1908, 8vo. 6*d.*

Guide to the Coral Gallery (Protoza, Porifera or Sponges, Hydrozoa, and Anthozoa) in the Department of Zoology, British Museum (Natural History). Second Edition. Pp. [iv. 8] 73. 90 Illustrations, Plan and Index. 1907, 8vo. 1*s.*

A Guide to the Fossil Mammals and Birds in the Department of Geology and Palæontology in the British Museum (Natural History). 8th Edition. [By A. S. Woodward, LL.D., F.R.S.] Pp. xvi., 100. 6 Plates, 88 Woodcuts. [With List of Illustrations, Table of Stratified Rocks, and Index.] 1904, 8vo. 6*d.*

A Guide to the Fossil Reptiles, Amphibians, and Fishes in the Department of Geology and Palæontology in the British Museum (Natural History). 8th Edition. [By A. S. Woodward, LL.D., F.R.S.] Pp. xviii., 110. 8 Plates and 116 Text-Figures. [With List of Illustrations, Geological Time-Scale and Index.] 1905, 8vo. 6*d.*

A Guide to the Fossil Invertebrate Animals in the Department of Geology and Palæontology in the British Museum (Natural History). [By F. A. Bather, D.Sc.] Pp. ix., 182. 7 Plates and 96 Text-Figures. [With List of Illustrations, Geological Time-scale, and Index.] 1907, 8vo. 1*s.*

List of British Seed-plants and Ferns exhibited in the Department of Botany, British Museum (Natural History). With table of Sequence of Orders, and Index of Genera. Pp. 44. 1907, 8vo. 4*d.*

Guide to Sowerby's Models of British Fungi in the Department of Botany, British Museum (Natural History). Second Edition, revised. By Worthington G. Smith, F.L.S. Pp. 83. 91 Woodcuts. With Table of Diagnostic Characters, Glossary, and Index. 1908, 8vo. 4*d.*

Guide to the British Mycetozoa exhibited in the Department of Botany, British Museum (Natural History). By Arthur Lister, F.R.S. Second Edition, revised. Pp. 48. 45 Woodcuts. Index. 1905, 8vo. 3*d.*

A Guide to the Mineral Gallery of the British Museum (Natural History). 10th Edition. [By L. Fletcher, M.A., F.R.S.] Pp. 32. Plan. 1908, 8vo. 1*d.*

The Student's Index to the Collection of Minerals, British Museum (Natural History). 23rd Edition. [By L. Fletcher, M.A., F.R.S.] Pp. 36. With a Plan of the Mineral Gallery. 1908, 8vo. 2*d.*

An Introduction to the Study of Minerals, with a Guide to the Mineral Gallery of the British Museum (Natural History). By L. Fletcher, M.A., F.R.S. 12th Edition. Pp. 123. 41 Woodcuts. With Plan of the Mineral Gallery and Index. 1908, 8vo. 6*d.*

An Introduction to the Study of Rocks. L. Fletcher, M.A., F.R.S. Pp. 118. [With Plan of the Mineral Gallery, Table of Contents, and Index.] 1898, 8vo. 6*d.*

An Introduction to the Study of Meteorites, with a List of the Meteorites represented in the Collection. By L. Fletcher, M.A., F.R.S., &c. Tenth Edition. Pp. 120. [With a Plan of the Mineral Gallery, and an Index to the Meteorites represented in the Collection.] 1908. 8vo. 6*d.*

Special Guides.

No. 1.—Guide to an Exhibition of Old Natural History Books, illustrating the origin and progress of the Study of Natural History up to the time of Linnæus. [By B. B. Woodward.] Pp. 27. 1905, 8vo. 3*d.*

No. 2.—Books and Portraits illustrating the History of Plant Classification exhibited in the Department of Botany. [By A. B. Rendle, M.A., D.Sc.] Pp. 19. 4 Plates. 1906, 8vo. 4*d.*

No. 3.—Memorials of Linnæus: a collection of Portraits, Manuscripts, Specimens, and Books exhibited to commemorate the Bicentenary of his Birth. [By A. B. Rendle, M.A., D.Sc.] Pp. 16. 2 Plates. 1907, 8vo. 3*d.*

Handbook of Instructions for Collectors, issued by the British Museum (Natural History). With Illustrations. Third Edition. Pp. 144. Index. 1906, 8vo. 1*s.* 6*d.*

Instructions for Collectors :—

No. 1.—Mammals. 3rd Edition. Pp. 12. Text illust. 1905, 8vo. 3*d.*

No. 2.—Birds. 4th Edition. Pp. 10. 5 figures in text. 1908, 8vo. 3*d.*

No. 3.—Reptiles, Batrachinians, and Fishes. [3rd Edition.] Pp. 12. 1903, 8vo. 4*d.*

No. 4.—Insects. 4th Edition. Pp. 11. Text illust. 1907, 8vo. 3*d.*

No. 5.—Diptera (Two-winged Flies). 3rd Edition. Pp 16. Text illust. 1908, 8vo. 3*d.*

No. 6.—Mosquitoes (Culicidæ). [3rd Edition.] Pp. 8. 1 Plate, 1 figure in text. 1904, 8vo. 3*d.*

No. 7.—Blood-sucking Flies, Ticks, &c. By E. E. Austen. 3rd Edition. Pp. 24 : 13 figures in text. 1907, 8vo. 3*d.*

No. 8.—Spiders, Centipedes, &c. 2nd Edition. Pp. 4. 1906, 8vo. 3*d.*

No. 9—Soft-bodied Invertebrate Animals ; Shells of Molluscs. [2nd Edition.] Pp. 15. 1902, 8vo. 4*d.*

No. 10.—Plants. [3rd Edition.] Pp. 8 : 2 figures in text. 1903, 8vo. 4*d.*

No. 11.—Fossils and Minerals. 3rd Edition. Pp. 8. 1906, 8vo. 3*d.*

British Museum (Natural History),
Cromwell Road,
London, S.W.
October 24th, 1908.

LONDON:
PRINTED FOR HIS MAJESTY'S STATIONERY OFFICE,
BY DARLING & SON, LTD., 34-40, BACON STREET, E.

1908.

Harvard MCZ Library
3 2044 066 326 687